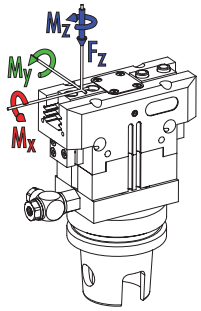
KM 63/PGN-plus

Finger load



	KM 63 PGN-plus 80	KM 63 PGN-plus 100
M_x max.	60.0 Nm	80.0 Nm
M_y max.	95.0 Nm	100.0 Nm
M_z max.	55.0 Nm	70.0 Nm
F_z max.	1500.0 N	2000.0 N

ⓘ Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself.

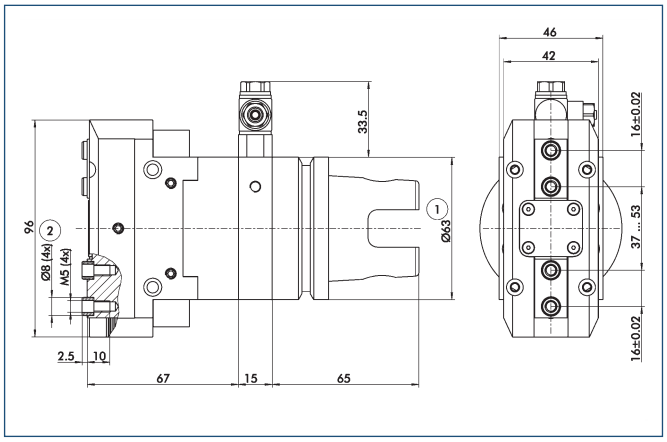
Technical data

Description		KM 63 PGN-plus 80 AS	KM 63 PGN-plus 80 IS	KM 63 PGN-plus 100 AS	KM 63 PGN-plus 100 IS
	ID	0308471	0308491	0308472	0308492
Stroke per jaw	[mm]	8.0	8.0	10.0	10.0
Gripping force	[N]	230.0 - 310.0	180.0 - 260.0	345.0 - 485.0	280.0 - 420.0
Gripping principle		I.D. gripping	O.D. gripping	I.D. gripping	O.D. gripping
Max. permitted finger length	[mm]	100.0	100.0	125.0	125.0
Max. permitted weight per finger	[kg]	0.6	0.6	1.1	1.1
Weight	[kg]	1.5	1.5	1.9	1.9
Max. permitted speed	[min^{-1}]	20	20	20	20
IP rating		40	40	40	40
Min. required supply pressure	[bar]	6.0	6.0	6.0	6.0
Max. permitted supply pressure	[bar]	60.0	60.0	60.0	60.0
Min. ambient temperature	[°C]	-10.0	-10.0	-10.0	-10.0
Max. ambient temperature	[°C]	90.0	90.0	90.0	90.0
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01

ⓘ When commissioned on a machine tool, the grippers must be set to the pressure of the drive medium. Please use our setting kit, ID 0308599, for this purpose.
Grippers with the "IS" designation are for O.D. gripping, those with the "AS" designation for I.D. gripping. In the IS version, the gripper is closed via the pressure of the medium; in the AS version, the pressure of the medium opens the gripper. Alternatively, gripping can be achieved by spring force, and the release with the pressure of the medium.

Air Oil Systems, Inc. www.aipil.com

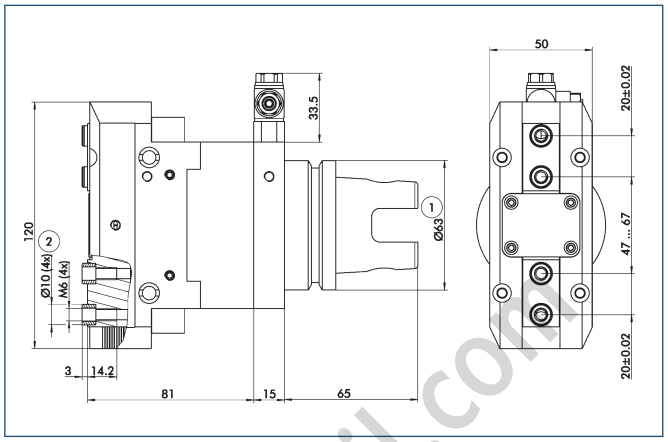
KM 63 PGN-plus 80 AS/IS



① Gripper connection
② Finger connection

ⓘ Please refer to the gripper in question for more detailed information.
Suitable gripper accessories can be found in the additional views at the end of the gripper size in question.

KM 63 PGN-plus 100 AS/IS



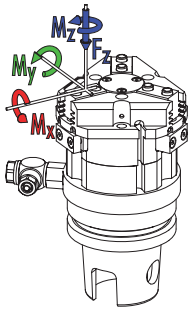
① Gripper connection
② Finger connection

ⓘ Please refer to the gripper in question for more detailed information.
Suitable gripper accessories can be found in the additional views at the end of the gripper size in question.

Air-Oil Systems, Inc. www.airoil.com

KM 63/PZN-plus

Finger load



	KM 63 PZN-plus 64	KM 63 PZN-plus 100
M_x max.	40.0 Nm	80.0 Nm
M_y max.	60.0 Nm	100.0 Nm
M_z max.	40.0 Nm	70.0 Nm
F_z max.	1100.0 N	2000.0 N

ⓘ Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself.

Technical data

Description		KM 63 PZN-plus 64 IS	KM 63 PZN-plus 100 IS
	ID	0308495	0308497
Stroke per jaw	[mm]	6.0	10.0
Gripping force	[N]	305.0-360.0	710.0-1020.0
Gripping principle		O.D. gripping	O.D. gripping
Max. permitted finger length	[mm]	80.0	125.0
Max. permitted weight per finger	[kg]	0.35	1.1
Weight	[kg]	1.4	3.0
Max. permitted speed	[min^{-1}]	20	20
IP rating		40	40
Min. required supply pressure	[bar]	6.0	6.0
Max. permitted supply pressure	[bar]	60.0	60.0
Min. ambient temperature	[°C]	-10.0	-10.0
Max. ambient temperature	[°C]	90.0	90.0
Repeat accuracy	[mm]	0.01	0.01

ⓘ When commissioned on a machine tool, the grippers must be set to the pressure of the drive medium. Please use our setting kit, ID 0308599, for this purpose.
Grippers with the "IS" designation are for O.D. gripping, those with the "AS" designation for I.D. gripping. In the IS version, the gripper is closed via the pressure of the medium; in the AS version, the pressure of the medium opens the gripper. Alternatively, gripping can be achieved by spring force, and the release with the pressure of the medium.

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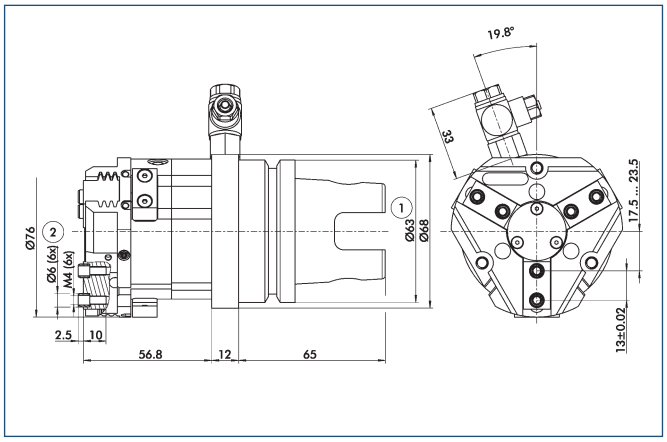
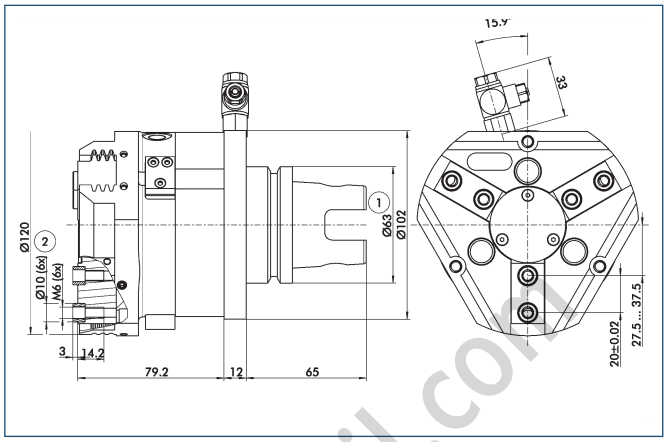
KM 63 PZN-plus 64 AS/IS



① Gripper connection
② Finger connection

ⓘ Please refer to the gripper in question for more detailed information.
Suitable gripper accessories can be found in the additional views at the end of the gripper size in question.

KM 63 PZN-plus 100 AS/IS



① Gripper connection
② Finger connection

ⓘ Please refer to the gripper in question for more detailed information.
Suitable gripper accessories can be found in the additional views at the end of the gripper size in question.

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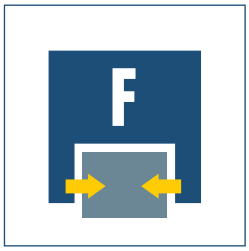
Weight
22 g .. 66 g



Gripping force
0.15 N

Stroke per finger
2.2 mm

Workpiece weight
3 g

Application example

Air-Oil-System.com

Pick & place unit for assembling circuit boards with capacitors

1. MC-GE 005
   Miniature Centric Gripper
2. Servo-electric Short-stroke Module with MLD 50K direct drive
3. Servo-electric Linear Axis with MLD 100 direct drive

Miniature Gripper

Single-acting miniature gripper with electric or pneumatic drive and spring return

Area of application

Grips the smallest workpieces in clean to low-soiling environments, such as in assembly lines and laboratories

Your advantages and benefits

Simple, fast drive kinematics
for short cycle times and high cycle frequencies

Integrated stroke adjustment
for optimum adaptation to different workpieces

Flexible fingers
for gripping sensitive or asymmetrical components

Small, compact design
for minimal interfering contours and low weight

Air-Oil Systems, Inc. www.airoil.com

General information on the series

Working principle
Single-acting, spring return via fingers

Housing material
Aluminum

Actuation
Electric, 24 VDC, or pneumatic

Warranty
24 months

Scope of delivery
Gripper with mounted finger guard, assembly and operating manual with manufacturer's declaration

Maintenance
Maintenance-free

Accessories
The MC-GE or MC-GP is also available on request as a 2-finger parallel gripper.

MC-GP 005

Technical data

Description		MC-GP 005
	ID	0305600
Max. stroke per finger	[mm]	2.2
Gripping force	[N]	0.15
Weight	[kg]	0.022
Recommended workpiece weight (max.)	[kg]	0.003
Minimum pressure	[bar]	2.0
Maximum pressure	[bar]	7.0
Closing time at max. stroke	[s]	0.05
Opening time at max. stroke	[s]	0.04
Smallest gripping Ø	[mm]	0.6
Largest gripping Ø	[mm]	5.0
Min. ambient temperature	[°C]	5.0
Max. ambient temperature	[°C]	55.0
Repeat accuracy	[mm]	0.1

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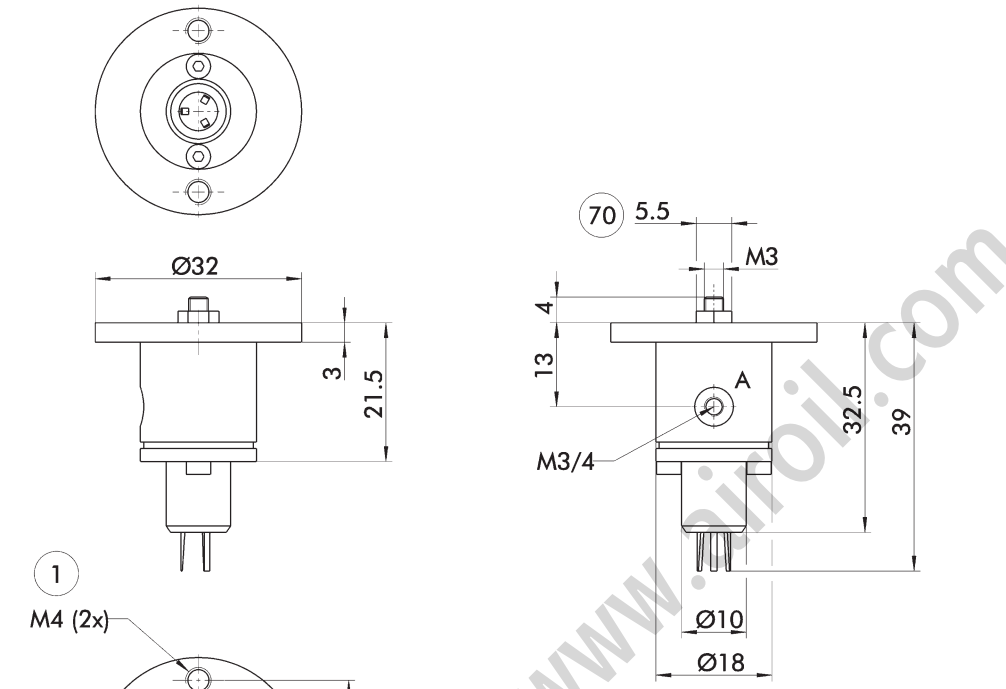
Main views



The drawing shows the gripper in the basic position with open fingers.

A,a Main/direct connection, gripper opening
(1) Gripper connection
(70) Width across flats
(90) Preset gripper diameter

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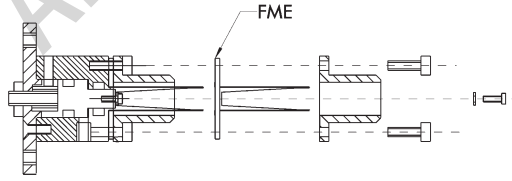
FME finger module



If a finger is damaged, it suffices to simply replace the FME finger module.

Description	ID
FME	0305603

MC-GE 005

Technical data

Description		MC-GE 005
	ID	0305601
Max. stroke per finger	[mm]	2.2
Gripping force	[N]	0.15
Weight	[kg]	0.066
Recommended workpiece weight (max.)	[kg]	0.003
Opening time at max. stroke	[s]	0.04
Closing time at max. stroke	[s]	0.04
Smallest gripping Ø	[mm]	0.6
Largest gripping Ø	[mm]	5.0
Min. ambient temperature	[°C]	5.0
Max. ambient temperature	[°C]	55.0
Repeat accuracy	[mm]	0.2
Voltage supply	[V]	24.0
Nominal power	[A]	0.2
Maximum power	[A]	1.0

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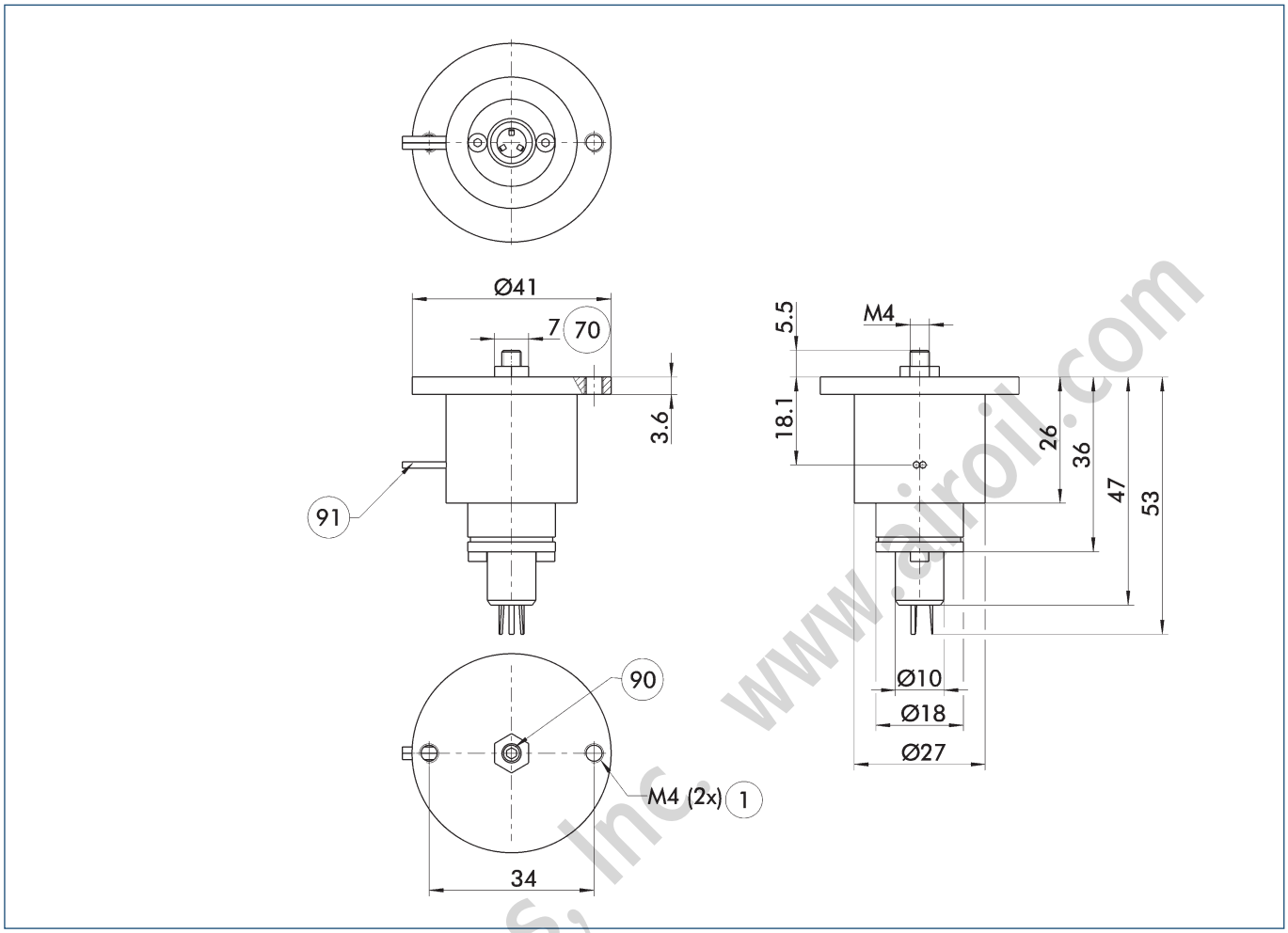
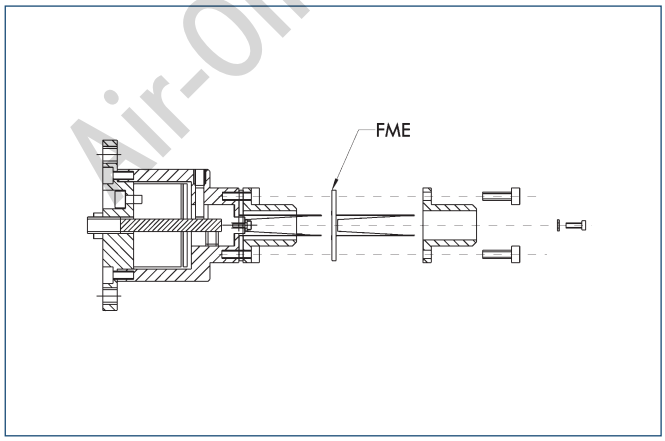
Main views



The drawing shows the gripper in the basic position with open fingers.

(1) Gripper connection
(70) Width across flats
(90) Preset gripper diameter
(91) 2-wire cable, length 200 mm, cross section 2 x 0.08 mm²

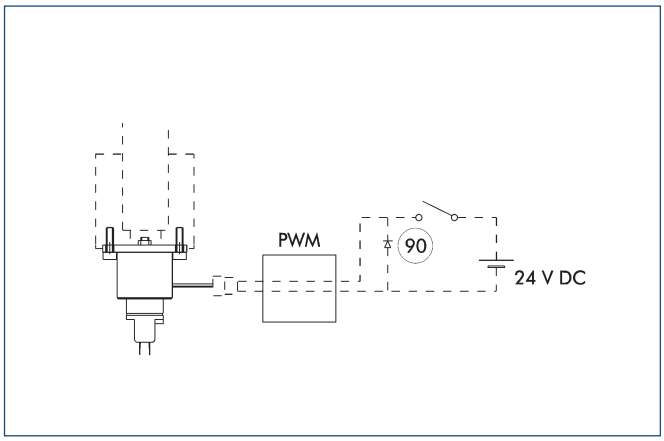
FME finger module



If a finger is damaged, it suffices to simply replace the FME finger module.

Description	ID
FME	0305603

PMW module



(90) Protective diode (provided by customer)

The PMW (pulse-width modulation) module is employed for the purpose of heat reduction with an ON time of > 5 min.

Description	ID
PWM-Modul	0305602

Air-Oil Systems, Inc. www.airoil.com

Weight
65 g

Workpiece weight
3 g

Max. finger opening
3 mm .. 4 mm

Application example

Air-Oil Systems, Inc. www.airoil.com

For mounting gears in the watch and clock-making industry

1. Finger attachment (parallel or centric gripper available)
2. Front part of housing with drive unit
3. Button for initiating the gripping cycle
4. Rear part of housing with battery compartment

Manually Guided Gripper

MGM manual miniature gripper with 2-finger parallel or 3-finger centric gripper attachment

Area of application

For use as a gripping tool for small to very small components in assembly, sorting tasks, laboratory work, precise and manual joining processes and in many other applications with miniature components

Your advantages and benefits

Ergonomic shape
for comfortable, fatigue-free working

Replaceable fingers
for handling all kinds of components

Operation
Operation using a pushbutton

Time-controlled gripping cycle

Air-Oil Systems, Inc. www.airoil.com

General information on the series

Length
Approx. 160 mm without gripper fingers

Drive
Slow cycle: 1 x type AAA micro-battery and 1 x aluminum packing block
Fast cycle: 2 x type AAA micro-batteries

Period of use
Approx. 1 hour continuous operation with 1 set of batteries

Scope of delivery
Gripper drive and finger attachment
Batteries not included in scope of delivery

Warranty
24 months

Technical data

Description	ID	MGM 0301001	MGM 0301002	MGM 0301003	MGM 0301004
No. of fingers		2	2	3	3
Jaw design		parallel-narrow	parallel-wide	centric-narrow	centric-wide
Weight without batteries	[kg]	0.065	0.065	0.065	0.065
Time for "Open-Closed-Open" cycle (fast)	[s]	1.0	1.0	1.0	1.0
Time for "Open-Closed-Open" cycle (slow)	[s]	2.0	2.0	2.0	2.0
Max. workpiece weight	[kg]	0.003	0.003	0.003	0.003
Max. finger opening	[mm]	4.0	4.0	4.0	4.0

ⓘ The maximum workpiece weight that can be gripped depends upon the characteristics of the workpiece (shape, surface, material, ...) and varies within a certain tolerance range.

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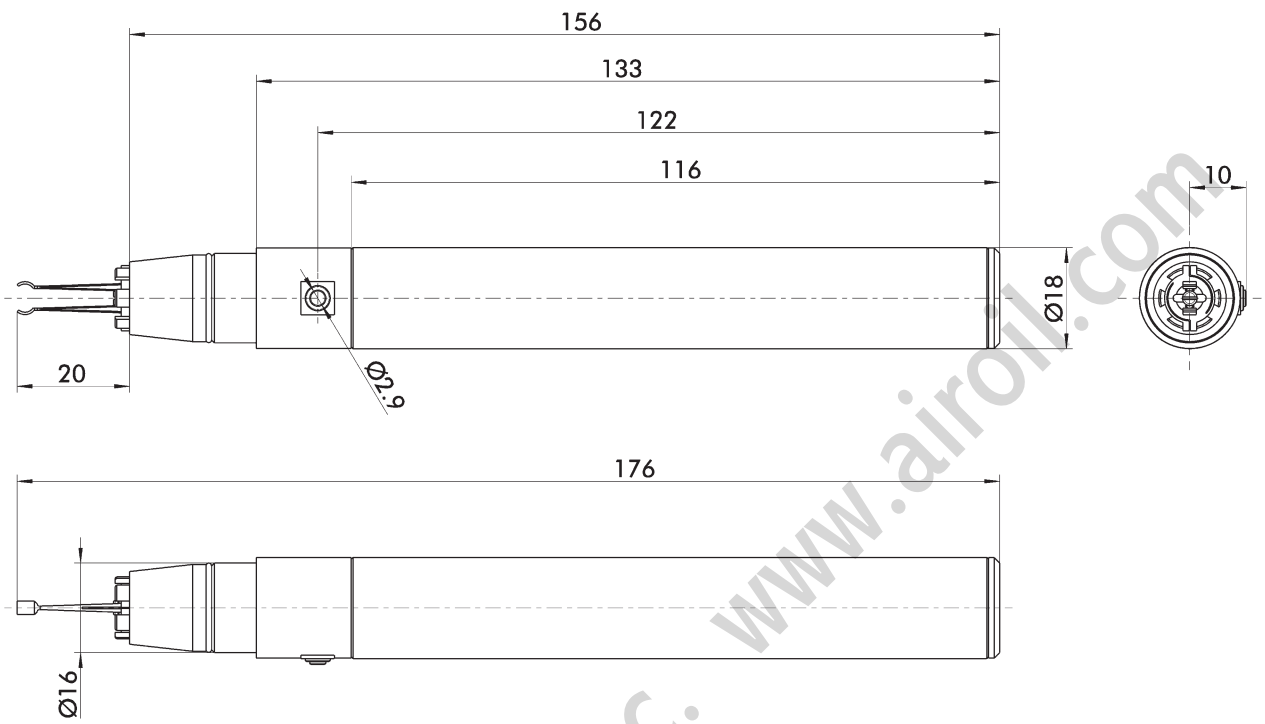
Main views



The drawing shows the gripper in the basic position with open fingers, and does not include the options described below.

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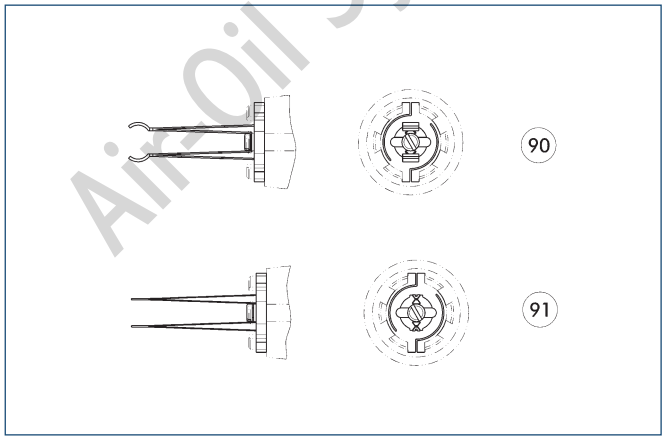
MGM 2-finger parallel finger attachment

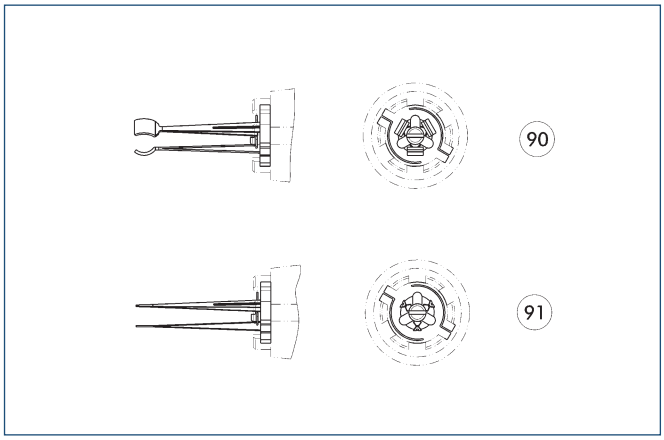


(90) Finger attachment MGM, 2-finger, parallel–wide (91) Finger attachment MGM, 2-finger, parallel–narrow

The MGM finger attachments are available with narrow and wide fingers for the different versions.

Description	ID	No. of fingers	Finger design	Weight [kg]
Finger attachments MGM	0301010	2	parallel–narrow	0.005
Finger attachments MGM	0301011	2	parallel–wide	0.005

MGM 3-finger centric finger attachment

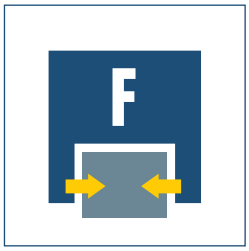


(90) Finger attachment MGM, 3-finger, centric–wide (91) Finger attachment MGM, 3-finger, centric–narrow

The MGM finger attachments are available with narrow and wide fingers for the different versions.

Description	ID	No. of fingers	Finger design	Weight [kg]
Finger attachments MGM	0301012	3	centric–narrow	0.005
Finger attachments MGM	0301013	3	centric–wide	0.005

Weight
1.18 kg



Gripping force per finger
5 N

Workpiece weight form-fit clamping
6 kg

Application example

Air-Oil Systems, Inc. www.airoil.com

7-DOF light-weight arm and gripping hand for applications in research and development and in service robotics

1. SGH Servo-electric Gripping Hand
2. PW 70 Rotary Tilt Unit
3. LWA 2 Light-weight Arm

Gripping Hand

Servo-electric gripping hand with eight programmable axes and joints

Area of application

For universal use, and ideally suited for all handling tasks requiring the precise, force-controlled gripping of difficult-to-grip workpieces or materials (e.g. foam, glass, highly-elastic rubber, ...).

Your advantages and benefits

Three multi-jointed fingers (two of which can be rotated)
for the form-fit or friction-locked gripping of various workpieces without retooling

Four integrated motors
for the precise closed-loop control of gripping force, speed and position

Common communication interface RS-232
for transmitting all gripper parameters, such as speed, stroke, position and motor current

Compact design
despite the integration of four motors and gear mechanisms

Air-Oil Systems, Inc. www.airoil.com

General information on the series

Scope of delivery
- Separate communication and control box
- Four DC servo-motors, three of which with patented decoupling gear
- Incremental sensors for all motors, control and test software
- Stands for safe table mounting, maintenance kit

Communication
Trigger box reached via RS-232 interface

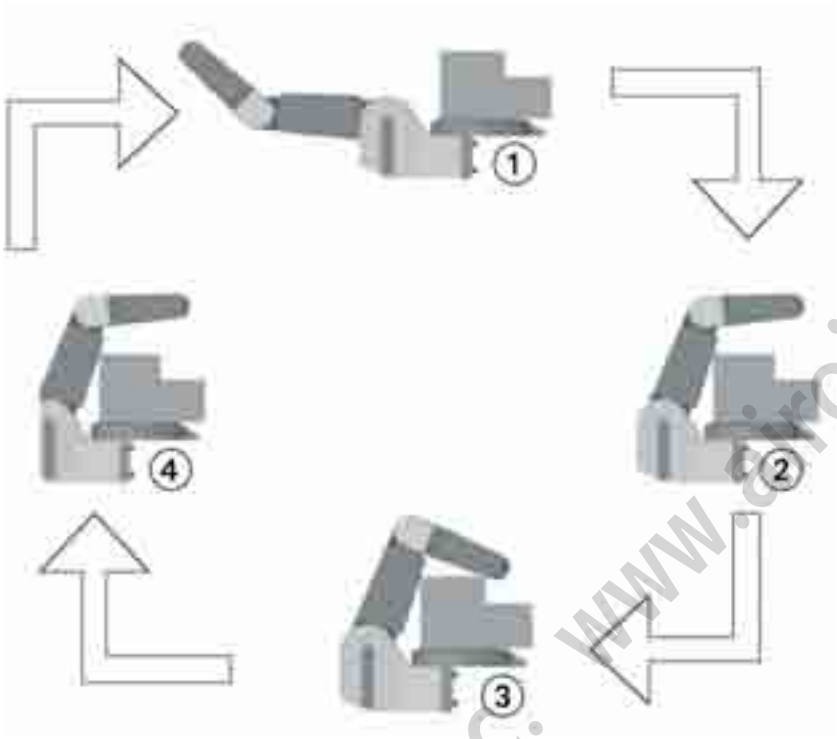
Warranty
12 months

Options and special information

Strain gauges
in fingers for measuring occurring forces and moments

24 V DC version
for mobile use

Drive design



Innovative drive design

A finger with two independent joints is driven by just one motor, saving both weight and volume. The SGH is therefore slim like the human hand. The result is that the fingers have good accessibility to workpieces and a large range of movement. This drive design is achieved using a special gear mechanism, which either drives both finger joints simultaneously, causing the first finger joint to move relative to the hand surface, or drives just the front joint, causing the second finger joint to move relative to the first finger joint.

① The finger is completely opened.
② The first finger joint rests, the second joint continues to move.
③ The finger is completely closed.
④ The first finger joint has opened, the second joint begins to open.

The gear mechanism between the hand surface and the first finger joint consists of two worm gears and the force-type connection for finger joint 1.

The first finger joint is driven directly, the second joint by means of a Bowden cable, which is secured to a gear situated on the axis of the first finger joint.

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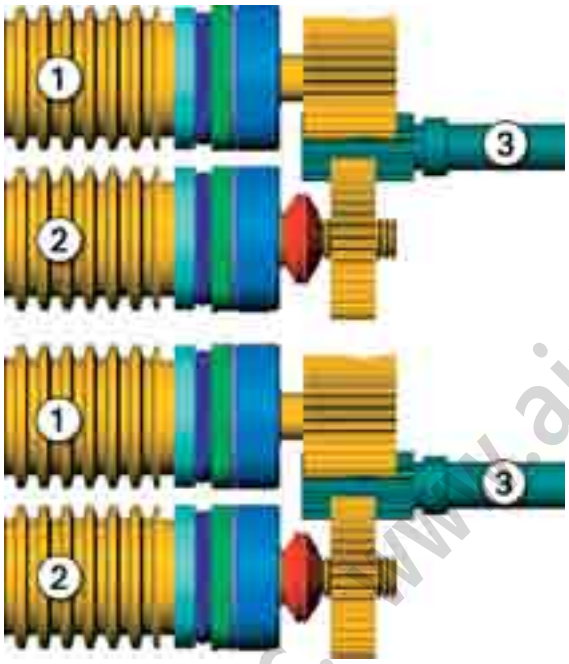
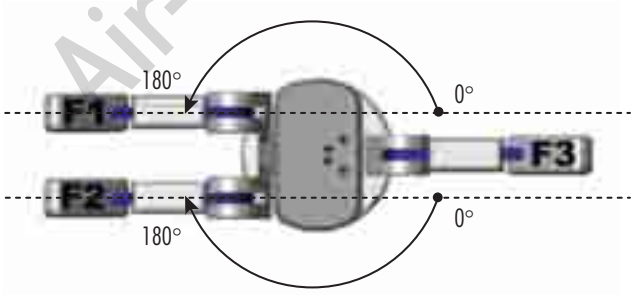
Processes in the gear mechanism when a finger closes

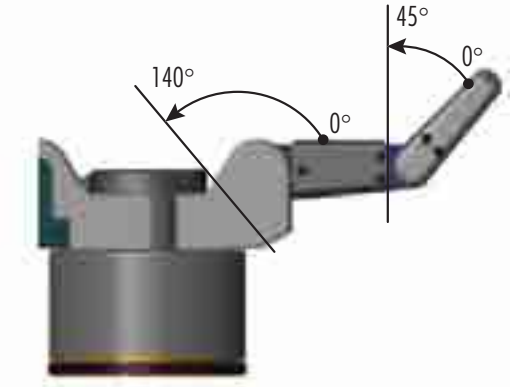


① Finger joint 2
② Finger joint 1
③ Input shaft

When neither the first nor second finger joint is touching the workpiece, both axes are driven, whereby the input torque for finger joint 1 is conveyed by means of a force-type connection (the two red diaphragm springs that hold the narrow gear wheel). There is no relative movement between finger joint 2 and finger joint 1, the two finger joints rotate together around finger axis 1. When finger joint 1 is touching the workpiece, joint 1 can no longer move and the two diaphragm springs can no longer hold the narrow gear. The latter disengages, breaking the friction lock. Now only joint 2 continues moving, while joint 1 is stationary.

Range of movement





The SCHUNK SGH gripping hand has three fingers each with two joints. In addition, the two outer fingers can be rotated by 180° around the hand surface.

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Technical data

Description		SGH
	ID	0306400
Force per finger	[N]	5.0
Swivel ranges of finger joint 1	[°]	140.0
Swivel ranges of finger joint 2	[°]	45.0
Swivel ranges, splaying movement	[°]	180.0
Weight of hand	[kg]	1.18
Max. workpiece weight (recommended for form-fit clamping)	[kg]	6.0
Time for complete finger stroke (both joints)	[s]	1.0
Time for splaying movement (180°)	[s]	0.4
Repeat accuracy	[°]	0.1
Power supply	[V AC]	220.0
Communication with trigger box		RS-232
Axes		8
Fingers		3
Fingers with rotating movement		2
Joints per finger		2
Motors per finger		1
Motors per hand		4

ⓘ The stated information on the force, repeat accuracy, workpiece weight and finger stroke assumes compliance with defined motion and environmental parameters.

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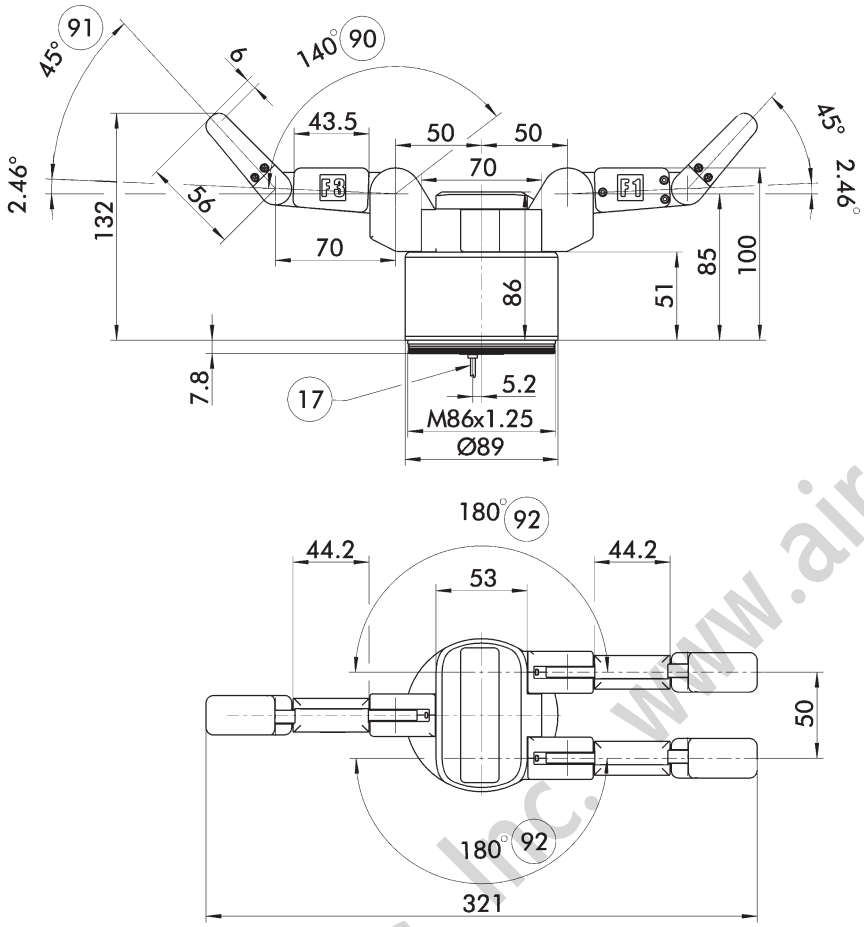
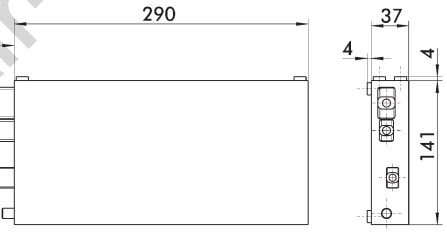
Main views



The drawing shows the gripper in the basic position with open fingers.

(17) Cable outlet
(90) Joint 1 swivel range
(91) Joint 2 swivel range
(92) Splaying joint swivel range

Trigger box



(90) Actuating connector
(91) Mains connector

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Accessories

www.airoil.com

ACCESSORIES

Series	Size	Page
Accessories		
Inductive Proximity Switches IN		954
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Inductive Proximity Switches

Inductive proximity switches are used to monitor the current position of automation components. They are available from SCHUNK in the versions IN (sensor with 30 cm molded cable and cable connector) or INK (sensor with 2 m long feeder cable and litz wires for wiring).

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Function description

With their oscillator coil, inductive proximity switches produce a high-frequency, alternating magnetic field. This field occurs on the active surface of the sensor. If a metal object enters the field, it draws energy from the magnetic field, thereby reducing the oscillation amplitude. This change is detected, and the sensor switches.

Your advantages and benefits

Mounting through bracket
for simple, fast assembly

Version with LED display
for checking the switching state directly at the sensor

Version with connector
for easy, rapid replacement of the extension cable

Ultra-flexible PUR cable
for a long life and resistance to many chemicals

Proximity switch can be installed flush
for minimal interfering contours in the application

Application example

1 Plug-in IN Sensors

2 PSK Swivel Head

3 PGN 2-Finger Parallel Gripper with ABR finger blanks

4 PZN 3-Finger Centric Gripper with workpiece-specific gripper fingers

Area of application

For monitoring of gripping and rotary modules, linear modules and robot accessories. Inductive SCHUNK sensors detect metals without contact and are resistant to vibration, dust and humidity.

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General information

Protection class according to DIN 40050
IP 67 when connected
Voltage
10 – 30 V DC, residual ripple < 15 %
Switching method
PNP switching
Warranty
24 months

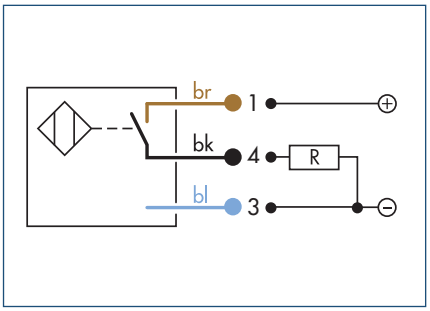
Notes

SCHUNK gripping, rotary and linear modules and robot accessory components must always be ordered from SCHUNK with the matching sensors, as these are ideally adapted to work together.

If major characteristics such as switching distance, switching function, hysteresis and voltage are largely the same, then proximity switches from other manufacturers may be used instead of inductive proximity switches (IN, INK) from SCHUNK.

However, if proximity switches from other manufacturers are used, SCHUNK cannot guarantee either their function or their functional reliability.

Circuit diagram of closer



Technical data

Description		IN 5/S-M8	IN 5/S-M12	INK 5/S
	ID	0301469	0301569	0301501
Switching function		Closer	Closer	Closer
Switching distance	[mm]	1.0	1.0	1.0
Hysteresis of nominal switching distance		< 15%	< 15%	< 15%
Switching method		PNP	PNP	PNP
Cable length	[cm]	30.0	30.0	200.0
Cable connector/cable end		M8	M12	Open wire
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0	1000.0
IP rating (sensor)		67	67	67
IP rating (connector, plugged in)		67	67	67
LED display on sensor		No	No	No
Cable diameter	[mm]	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5
No. of wires		3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14

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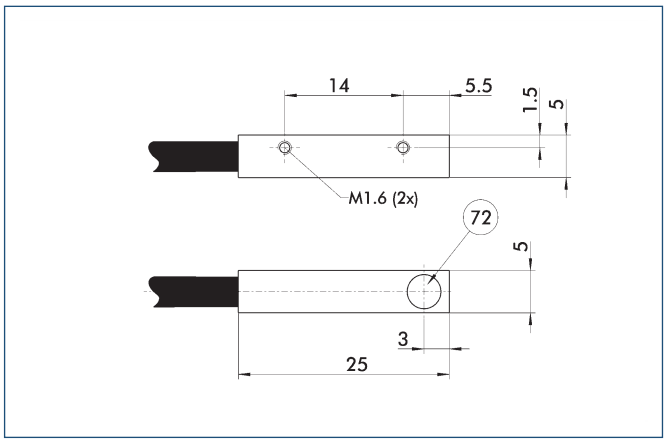
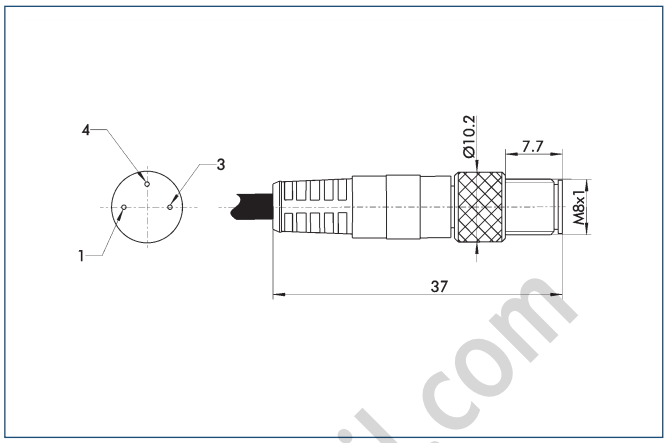
IN 5/S sensor

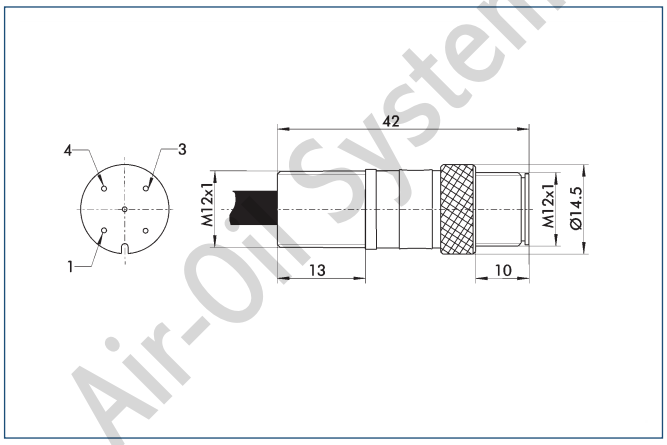


(72) Active sensor surface

M8 connector



M12 connector



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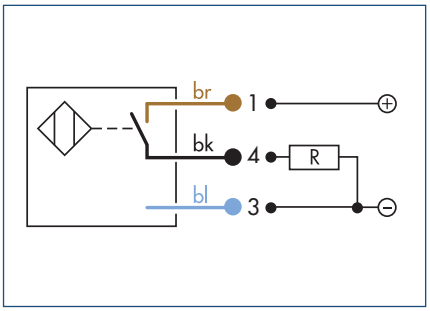
Circuit diagram of closer



Technical data

Description		IN 8/S-M8	IN 8/S-M12	INK 8/S
	ID	0301481	0301581	9700052
Switching function		Closer	Closer	Closer
Switching distance	[mm]	0.8	0.8	0.8
Hysteresis of nominal switching distance		< 15%	< 15%	< 15%
Switching method		PNP	PNP	PNP
Cable length	[cm]	30.0	30.0	200.0
Cable connector/cable end		M12	M12	Open wire
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0	1000.0
IP rating (sensor)		67	67	67
IP rating (connector, plugged in)		67	67	67
LED display on sensor		No	No	No
Cable diameter	[mm]	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5
No. of wires		3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14

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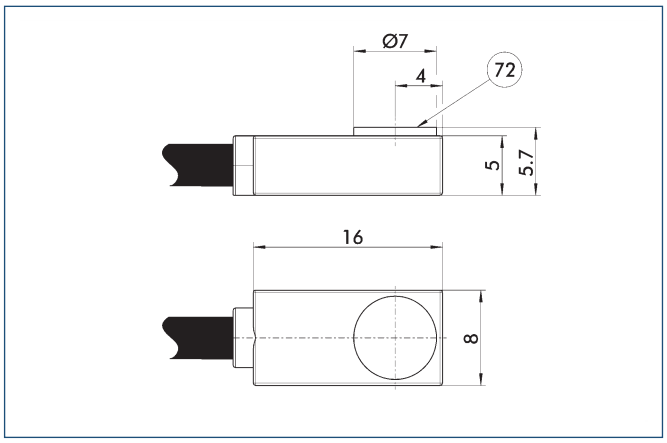
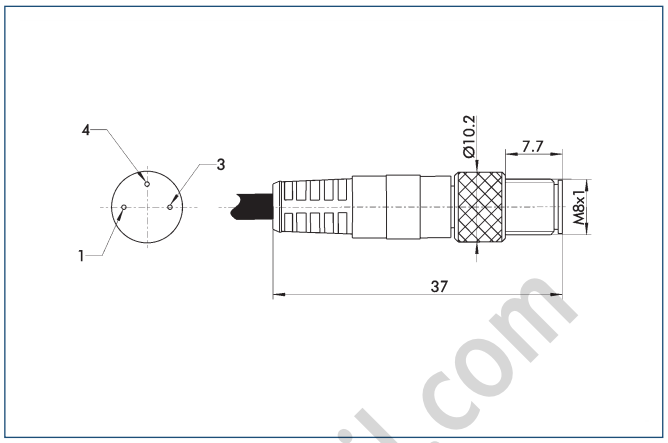
IN 8/S sensor

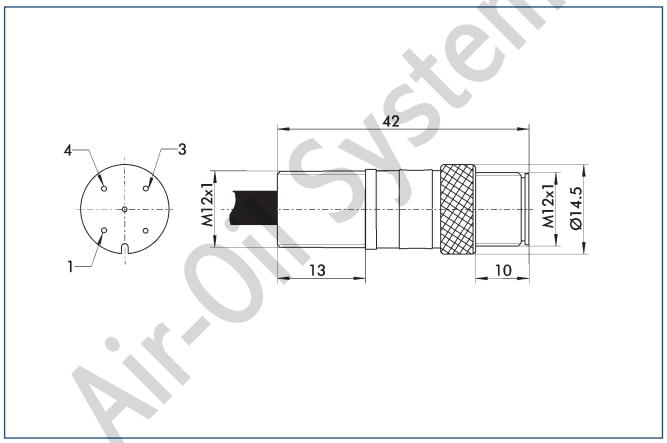


(72) Active sensor surface

M8 connector



M12 connector



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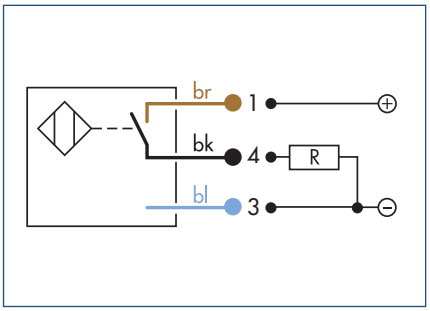
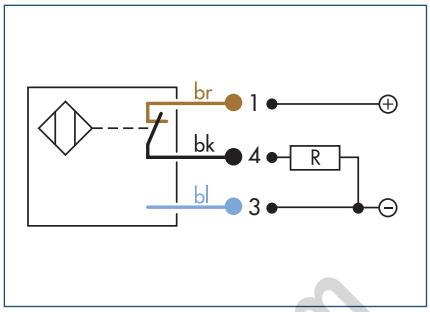
Circuit diagram of closer



Circuit diagram of opener



Technical data

Description		IN 40/S-M8	IN 40/S-M12	INK 40/S	IN 40/O-M8	IN 40/O-M12	INK 40/O
	ID	0301474	0301574	0301555	0301484	0301584	0301556
Switching function		Closer	Closer	Closer	Opener	Opener	Opener
Switching distance	[mm]	0.8	0.8	0.8	0.8	0.8	0.8
Hysteresis of nominal switching distance		< 15%	< 15%	< 15%	< 15%	< 15%	< 15%
Switching method		PNP	PNP	PNP	PNP	PNP	PNP
Cable length	[cm]	30.0	30.0	200.0	30.0	30.0	200.0
Cable connector/cable end		M8	M12	Open wire	M8	M12	Open wire
Type of voltage		DC	DC	DC	DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0	70.0	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0
IP rating (sensor)		67	67	67	67	67	67
IP rating (connector, plugged in)		67	67	67	67	67	67
LED display on sensor		Yes	Yes	Yes	Yes	Yes	Yes
Cable diameter	[mm]	3.5	3.5	3.5	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5	17.5	17.5	17.5
No. of wires		3	3	3	3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14	0.14	0.14	0.14

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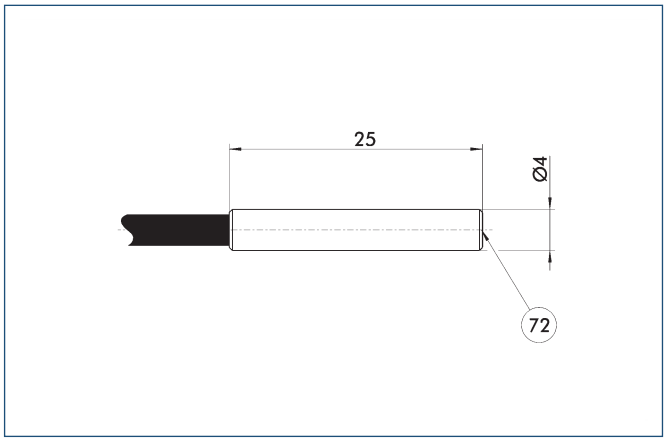
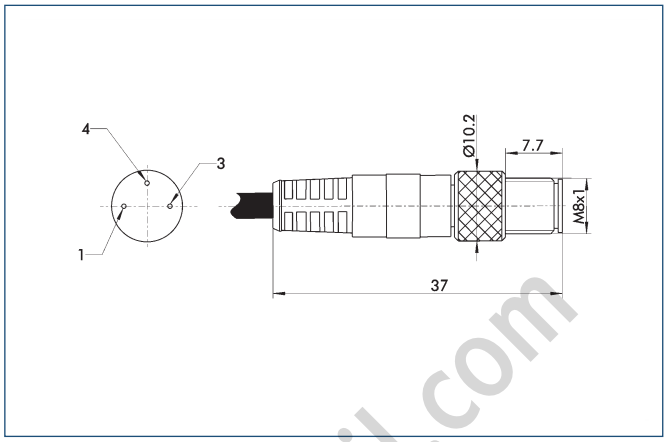
IN 40 sensor

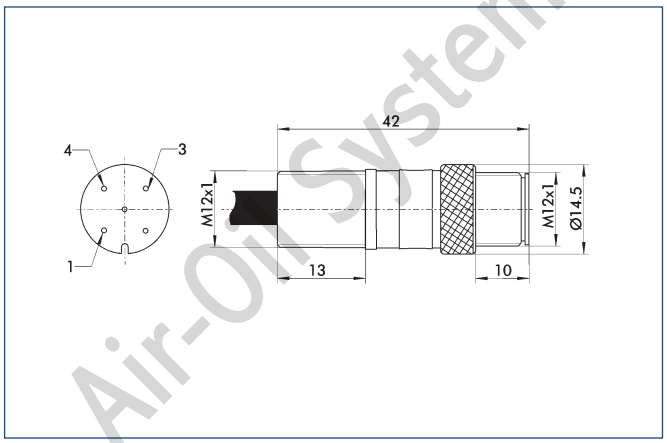


(72) Active sensor surface

M8 connector



M12 connector



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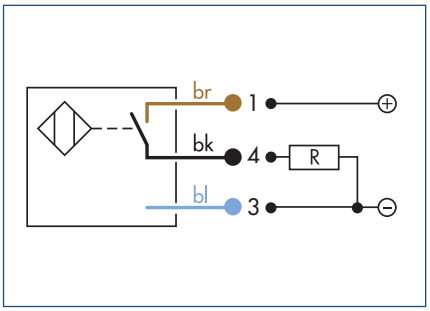
Circuit diagram of closer



Technical data

Description		IN 60/S-M8	IN 60/S-M12	INK 60/S
	ID	0301485	0301585	0301553
Switching function		Closer	Closer	Closer
Switching distance	[mm]	1.5	1.5	1.5
Hysteresis of nominal switching distance		< 15%	< 15%	< 15%
Switching method		PNP	PNP	PNP
Cable length	[cm]	30.0	30.0	200.0
Cable connector/cable end		M8	M12	Open wire
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0	1000.0
IP rating (sensor)		67	67	67
IP rating (connector, plugged in)		67	67	67
LED display on sensor		No	No	No
Cable diameter	[mm]	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5
No. of wires		3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14

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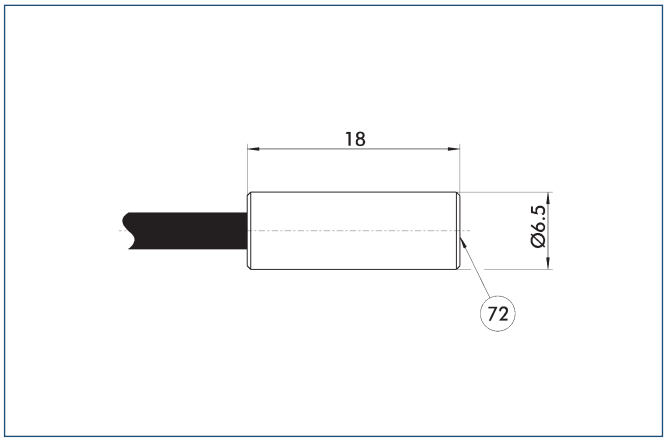
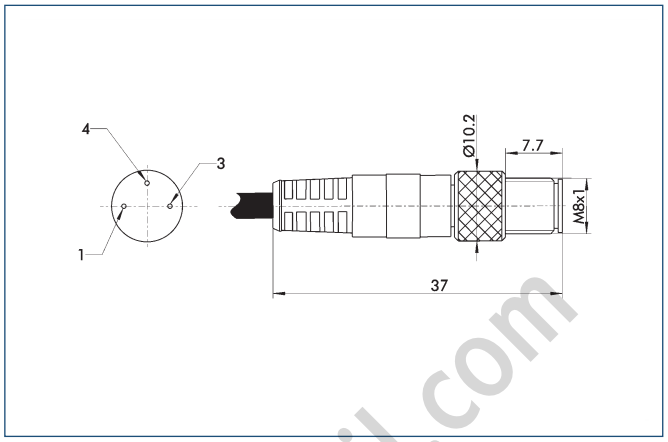
IN 60/S sensor

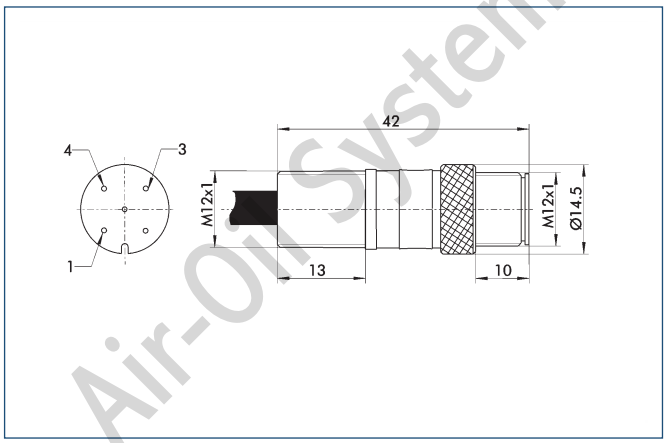


(72) Active sensor surface

M8 connector



M12 connector



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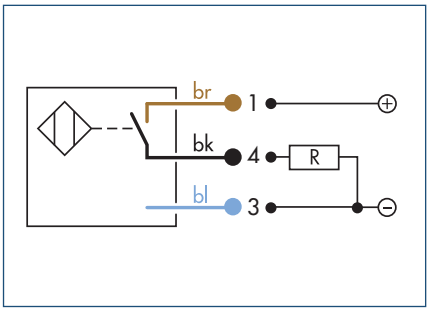
Circuit diagram of closer



Technical data

Description		IN 65/S-M8	IN 65/S-M12	INK 65/S
	ID	0301476	0301576	0301554
Switching function		Closer	Closer	Closer
Switching distance	[mm]	1.5	1.5	1.5
Hysteresis of nominal switching distance		< 15%	< 15%	< 15%
Switching method		PNP	PNP	PNP
Cable length	[cm]	30.0	30.0	200.0
Cable connector/cable end		M8	M12	Open wire
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0	1000.0
IP rating (sensor)		67	67	67
IP rating (connector, plugged in)		67	67	67
LED display on sensor		Yes	Yes	No
Cable diameter	[mm]	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5
No. of wires		3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14

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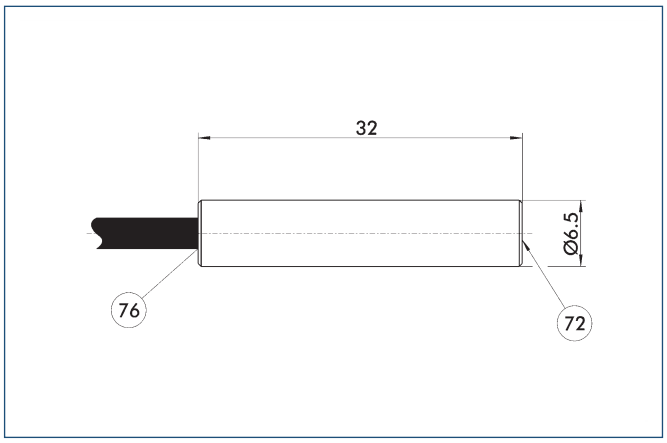
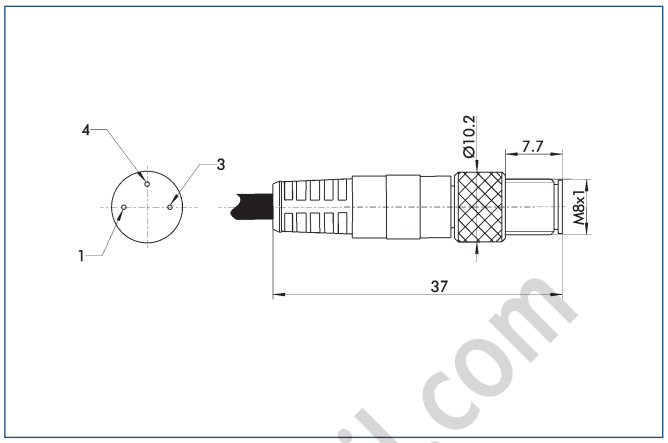
IN 65/S sensor

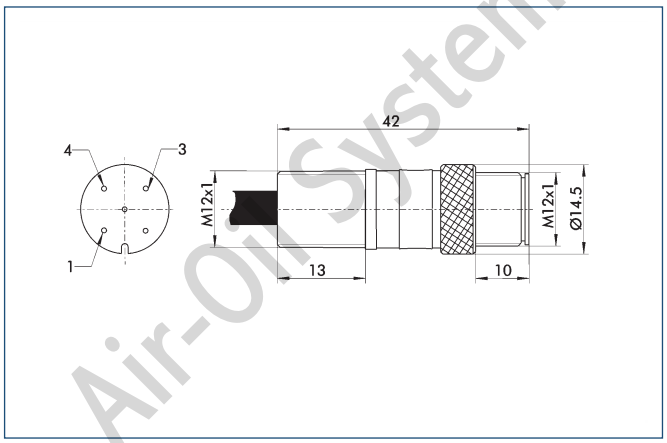


M8 connector



(72) Active sensor surface
(76) LED

M12 connector



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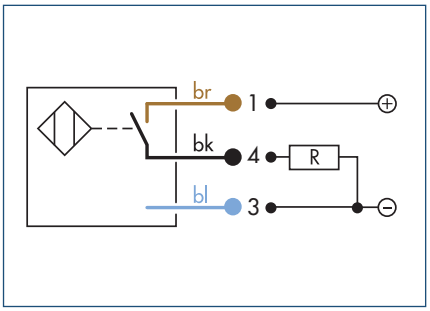
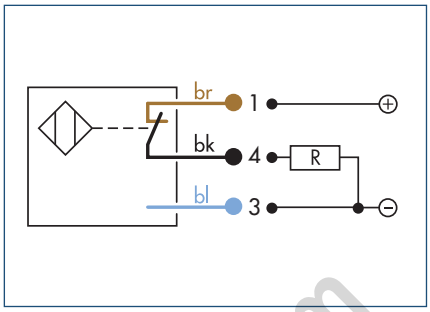
Circuit diagram of closer



Circuit diagram of opener



Technical data

Description		IN 80/S-M8	IN 80/S-M12	INK 80/S	IN 80/O-M8	IN 80/O-M12	INK 80/O
	ID	0301478	0301578	0301550	0301488	0301588	0301551
Switching function		Closer	Closer	Closer	Opener	Opener	Opener
Switching distance	[mm]	1.5	1.5	1.5	1.5	1.5	1.5
Hysteresis of nominal switching distance		< 15%	< 15%	< 15%	< 15%	< 15%	< 15%
Switching method		PNP	PNP	PNP	PNP	PNP	PNP
Cable length	[cm]	30.0	30.0	200.0	30.0	30.0	200.0
Cable connector/cable end		M8	M12	Open wire	M8	M12	Open wire
Type of voltage		DC	DC	DC	DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0	70.0	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0	1000.0	1000.0	1000.0	1000.0
IP rating (sensor)		67	67	67	67	67	67
IP rating (connector, plugged in)		67	67	67	67	67	67
LED display on sensor		Yes	Yes	Yes	Yes	Yes	Yes
Cable diameter	[mm]	3.5	3.5	3.5	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5	17.5	17.5	17.5
No. of wires		3	3	3	3	3	3
Wire cross section	[mm^2]	0.14	0.14	0.14	0.14	0.14	0.14

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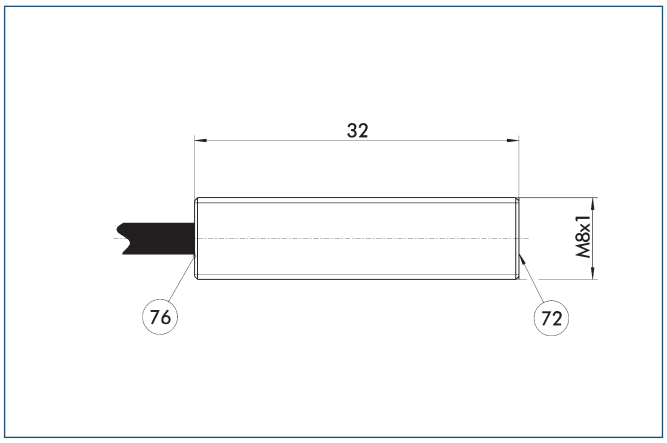
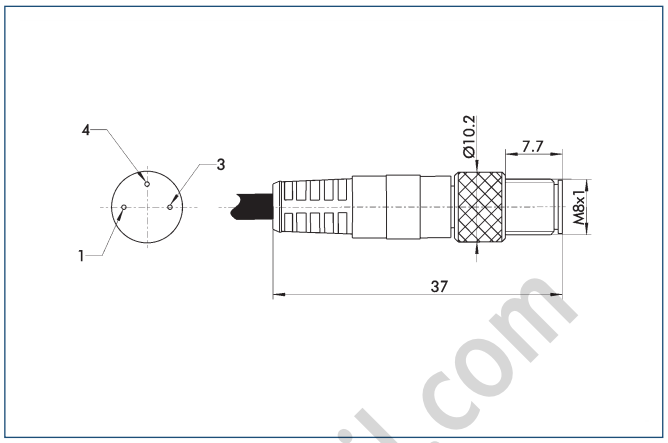
IN 80 sensor

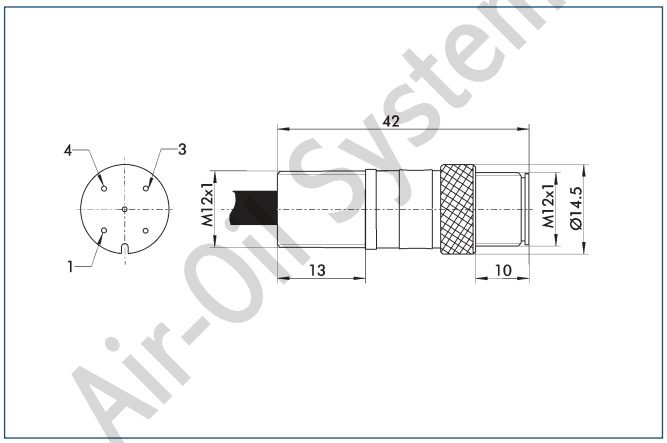


M8 connector



(72) Active sensor surface
(76) LED

M12 connector



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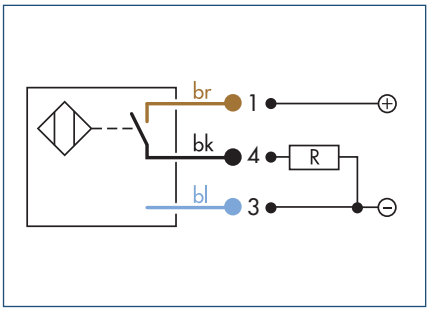
IN B-80/80SL

Circuit diagram of closer



Technical data

Description		IN-B 80/S-M8	IN 80/SL-M12	INK 80/SL
	ID	0301477	0301529	0301579
Switching function		Closer	Closer	Closer
Switching distance	[mm]	1.5	3.0	3.0
Hysteresis of nominal switching distance		< 15%	< 15%	< 15%
Switching method		PNP	PNP	PNP
Cable length	[cm]		30.0	200.0
Cable connector/cable end		M8	M12	Open wire
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0	1000.0
IP rating (sensor)		67	67	67
IP rating (connector, plugged in)		67	67	67
LED display on sensor		Yes	Yes	Yes
Cable diameter	[mm]		3.5	3.5
Min. bending radius (dynamic)	[mm]		35.0	35.0
Min. bending radius (static)	[mm]		17.5	17.5
No. of wires/contacts		3	3	3
Wire cross section	[mm²]		0.14	0.14

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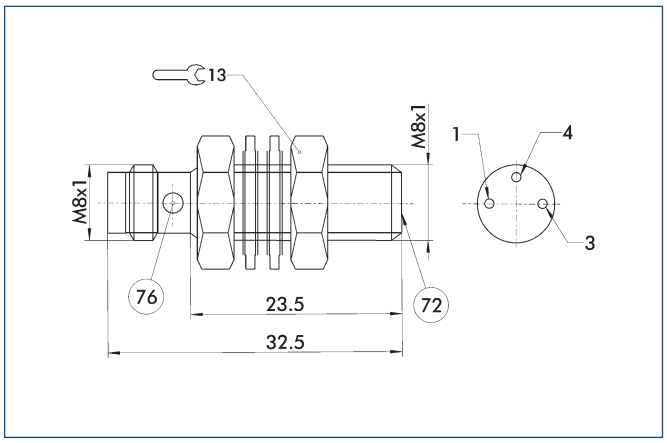
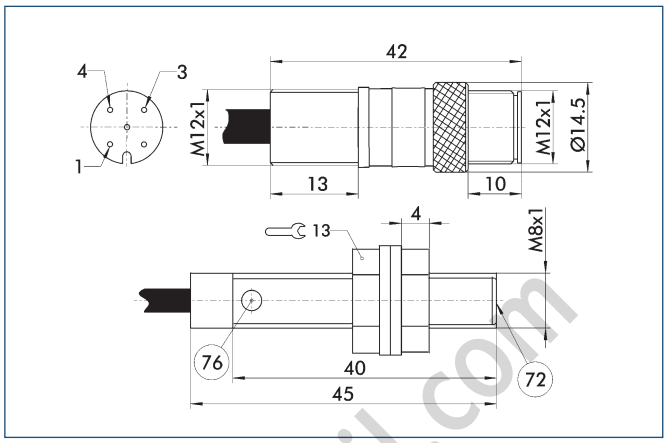
IN B-80 sensor



(72) Active sensor surface
(76) LED

IN 80/SL sensor



(72) Active sensor surface
(76) LED

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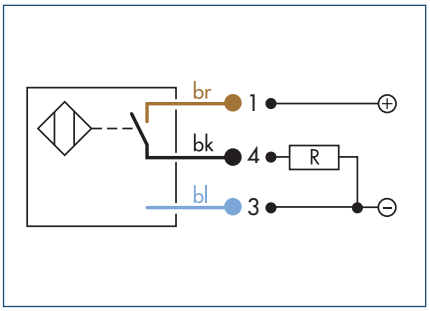
Circuit diagram of closer



Technical data

Description		IN 120/S-M12	INK 120/S
	ID	0301592	0301562
Switching function		Closer	Closer
Switching distance	[mm]	2.0	2.0
Hysteresis of nominal switching distance		< 15%	< 15%
Switching method		PNP	PNP
Cable length	[cm]	30.0	200.0
Cable connector/cable end		M12	Open wire
Type of voltage		DC	DC
Nominal voltage	[V]	24.0	24.0
Min. voltage	[V]	10.0	10.0
Max. voltage	[V]	30.0	30.0
Voltage drop	[V]	1.5	1.5
Max. power on contact	[A]	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0
Max. switching frequency	[Hz]	1000.0	1000.0
IP rating (sensor)		67	67
IP rating (connector, plugged in)		67	67
LED display on sensor		No	No
Cable diameter	[mm]	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5
No. of wires		3	3
Wire cross section	[mm²]	0.14	0.14

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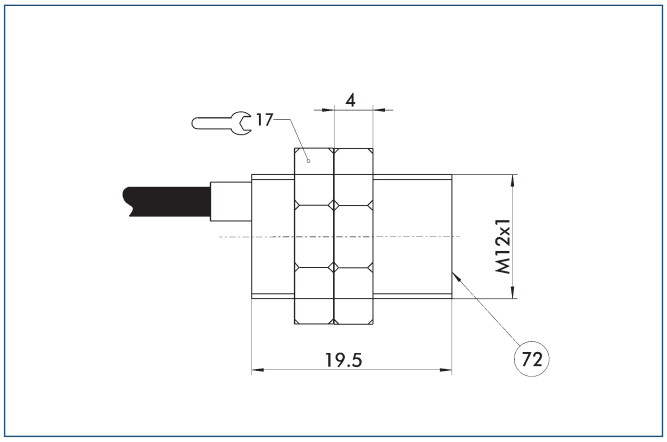
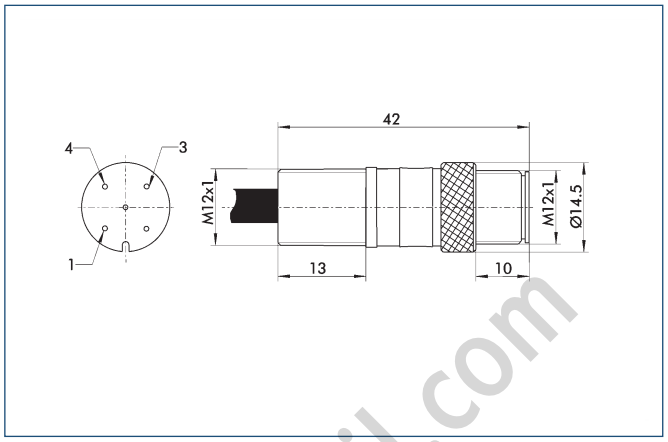
IN 120/S sensor



M12 connector



(72) Active sensor surface

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Reed Switches

Reed switches are mechanical switches that react to the presence of magnetic fields (magnets). They are frequently used as low-price alternatives to electronic magnetic switches (MMS).

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Function description

Reed switches consist of tiny, metal contacts (reeds). Under the influence of a magnetic field, they bend and touch one another, closing the contact.

Your advantages and benefits

Economical
for cost-saving applications

Installed in the sensor slot
for space-saving, simple and fast assembly

Version with connector
for easy, rapid replacement of the extension cable

Ultra-flexible PUR cable
for a long life and resistance to many chemicals

Application example

1 RMS Reed Switches for mounting in the C-slot of the gripper
2 Sealed 3-Finger Centric Gripper
3 Workpiece-specific Gripper Fingers

Area of application

For monitoring of gripping and rotary modules, linear modules and robot accessories. Reed switches from SCHUNK detect metals without contact or wear and are resistant to dust and humidity. Magnetic switches are fitted in slots and therefore do not form any additional interfering contours. Please note that not all SCHUNK products with sensor slot can be monitored using low-cost reed switches.

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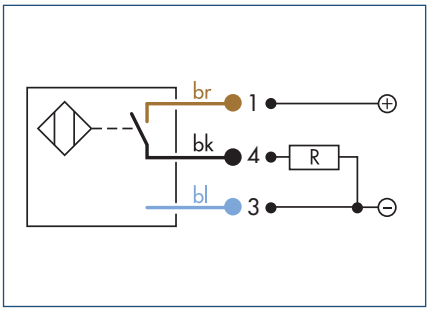
General information

Material
Sensor housing: PA in the RMS 22, stainless steel in the RMS 80
Cable: PUR sheathing
Mounting
Clamps in sensor slot (RMS 22) / brackets (RMS 80)
Protection class to DIN 40050
IP 67 when connected
Warranty
24 months

Notes

SCHUNK gripper, rotary and linear modules and robot accessory components that are to be monitored by RMS slot-fitted reed switches can generally only be reliably monitored with the appropriate RMS reed switches from SCHUNK. Sensors and products are matched on the basis of the relationships between the parameters type and field strength of the magnet, distance, wall thickness and wall material of the magnet and the sensor, and the orientation and sensitivity of the sensor itself.
For this reason, sensors from other manufacturers employed in SCHUNK products rarely give satisfactory switching results.

Circuit diagram of closer



Technical data

Description		RMS 22-S-M8
	ID	0377720
Switching function		Closer
Switching method		PNP, NPN
Cable length	[cm]	30.0
Cable connector/cable end		M8
Type of voltage		DC
Max. voltage DC	[V]	120.0
Voltage drop DC	[V]	0.0
Max. current on contact DC	[A]	0.4
Type of voltage		AC
Max. voltage AC	[V]	120.0
Voltage drop AC	[V]	0.0
Max. power on contact AC	[A]	0.4
Min. ambient temperature	[°C]	-5.0
Max. ambient temperature	[°C]	70.0
Typical switching time	[s]	0.01
IP rating (sensor)		67
IP rating (connector, plugged in)		67
LED display on sensor		No
Cable diameter	[mm]	2.1
Min. bending radius (dynamic)	[mm]	21.0
Min. bending radius (static)	[mm]	10.5
No. of wires		2
Wire cross section	[mm^2]	0.14

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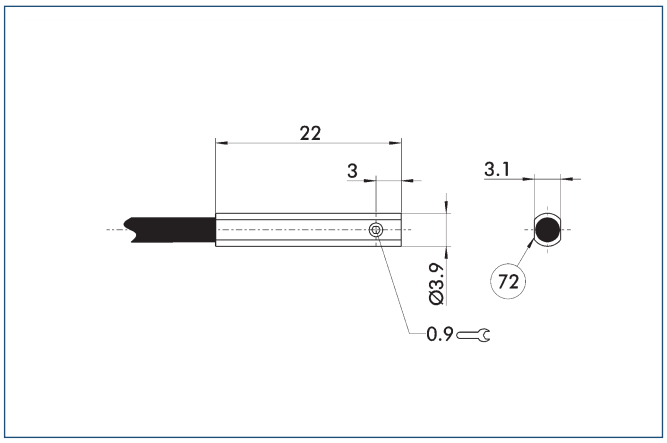
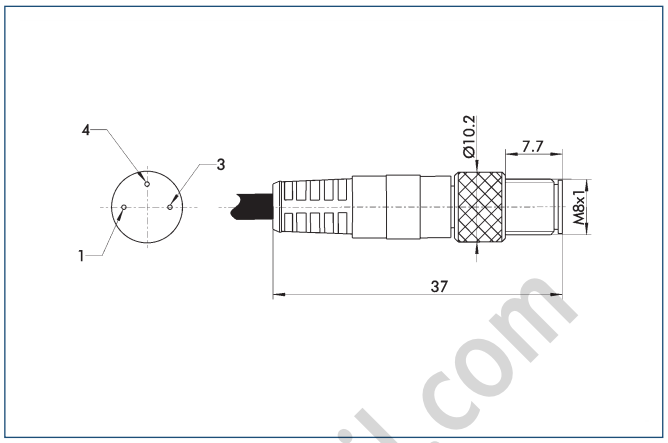
RMS 22 sensor



M8 connector



(72) Active sensor surface

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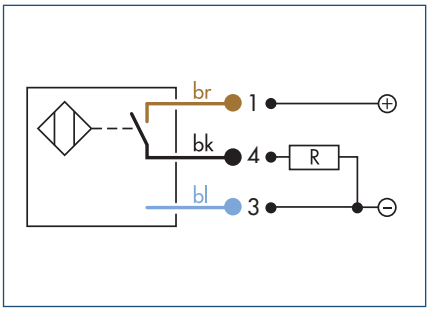
Circuit diagram of closer



Technical data

Description		RMS 80-S-M8
	ID	0377721
Switching function		Closer
Switching method		PNP, NPN
Cable length	[cm]	30.0
Cable connector/cable end		M8
Type of voltage		DC
Max. voltage DC	[V]	120.0
Voltage drop DC	[V]	0.0
Max. current on contact DC	[A]	0.4
Type of voltage		AC
Max. voltage AC	[V]	120.0
Voltage drop AC	[V]	0.0
Max. power on contact AC	[A]	0.4
Min. ambient temperature	[°C]	-5.0
Max. ambient temperature	[°C]	70.0
Typical switching time	[s]	0.01
IP rating (sensor)		67
IP rating (connector, plugged in)		67
LED display on sensor		No
Cable diameter	[mm]	2.1
Min. bending radius (dynamic)	[mm]	21.0
Min. bending radius (static)	[mm]	10.5
No. of wires		2
Wire cross section	[mm²]	0.14

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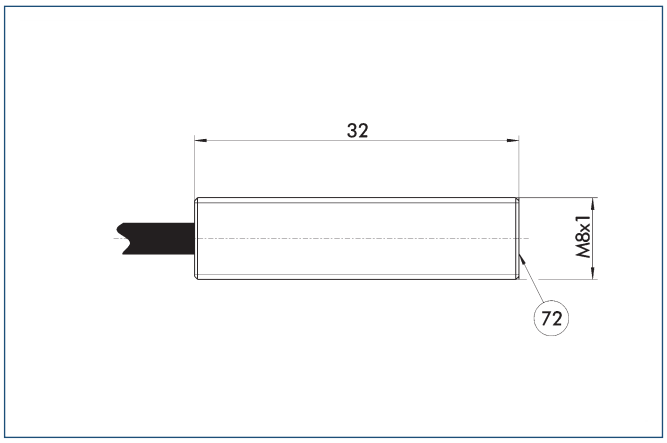
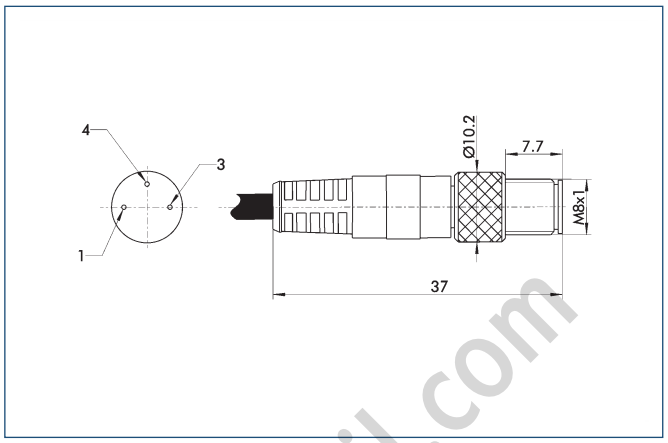
RMS 80 sensor



M8 connector



(72) Active sensor surface

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Magnetic Switches

Magnetic switches are used for monitoring the position of automation components. They detect the approach of a magnet without contact and, above a certain switching threshold, enable their output.

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Function description

Magnetic switches react to magnetic fields. The resistors in the sensor consist of several ferromagnetic and non-magnetic layers. Two shielded and two non-shielded resistors are combined in a bridge circuit, which produces a signal proportional to the magnetic field when one is present. Above a threshold value, an output signal is switched via a comparator, and the sensor reacts.

Your advantages and benefits

Installation in the sensor slot
for space-saving, simple and fast assembly

Version with LED display (MMS 22)
for checking the switching position directly at the sensor

Version with connector
for easy, rapid replacement of the extension cable

Application example

1 MMS Electronic Magnetic Switches for mounting in the C-slot of the gripper

2 Sealed 3-Finger Centric Gripper

3 Workpiece-specific Gripper Fingers

Area of application

For use in the monitoring of gripping and rotary modules, linear modules and robot accessories. Magnetic switches from SCHUNK detect metals without contact or wear and are resistant to vibration, dust and humidity. Magnetic switches are fitted in slots and therefore do not form any additional interfering contours.

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General information

Material
Sensor housing: PA in the MMS 22, aluminum in the MMS 30
Cable: with PUR sheathing

Mounting
Clamps in the sensor slot

Protection class to DIN 40050
IP 67 when connected

Voltage
10 – 30 V DC at < 10 % residual ripple

Switching method
PNP switching / NPN switching

Warranty
24 months

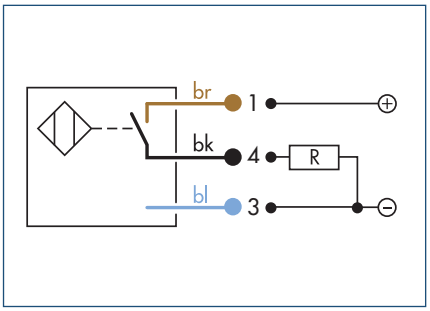
Notes

SCHUNK gripper, rotary and linear modules and robot accessory components that are to be monitored with electromagnetic slot-fitted switches can generally only be reliably monitored with the appropriate electromagnetic switches from SCHUNK.

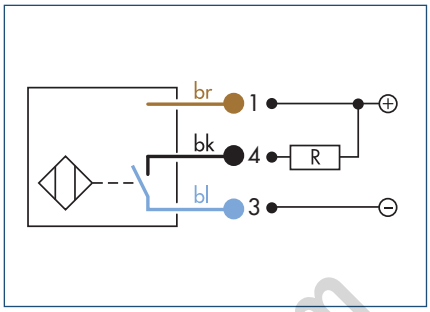
Sensors and products are matched on the basis of the relationships between the parameters type and field strength of the magnet, distance, wall thickness and wall material of the magnet and the sensor, and the orientation and sensitivity of the sensor itself.

For this reason, sensors from other manufacturers employed in SCHUNK products rarely give satisfactory switching results.

Circuit diagram of closer



Circuit diagram of NPN closer



Technical data

Description		MMS 22-S-M5-PNP	MMS 22-S-M5-NPN	MMS 22-S-M8-PNP	MMS 22-S-M8-NPN	MMSK 22-S-PNP	MMSK 22-S-NPN
	ID	0301454	0301455	0301450	0301451	0301452	0301453
Switching function		Closer	Closer	Closer	Closer	Closer	Closer
Switching method		PNP	NPN	PNP	NPN	PNP	NPN
Cable length	[cm]	30.0	30.0	30.0	30.0	200.0	200.0
Cable connector/cable end		M5	M5	M8	M8	Open wire	Open wire
Type of voltage		DC	DC	DC	DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2	0.2	0.2	0.2
Min. ambient temperature	[°C]	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
Max. ambient temperature	[°C]	70.0	70.0	70.0	70.0	70.0	70.0
Typical switching time	[s]	0.001	0.001	0.001	0.001	0.001	0.001
IP rating (sensor)		67	67	67	67	67	67
IP rating (connector, plugged in)		67	67	67	67	67	67
LED display on sensor		Yes	Yes	Yes	Yes	Yes	Yes
Cable diameter	[mm]	2.1	2.1	2.1	2.1	2.1	2.1
Min. bending radius (dynamic)	[mm]	21.0	21.0	21.0	21.0	21.0	21.0
Min. bending radius (static)	[mm]	10.5	10.5	10.5	10.5	10.5	10.5
No. of wires		3	3	3	3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14	0.14	0.14	0.14

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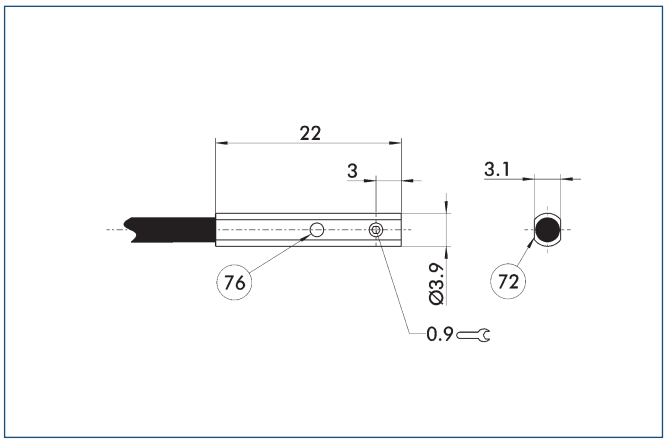
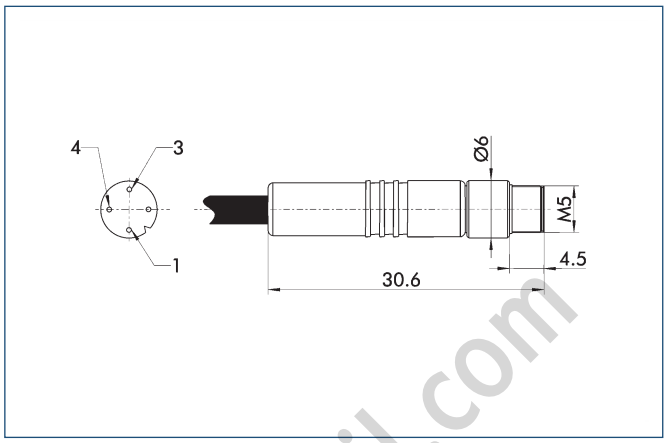
MMS 22 sensor

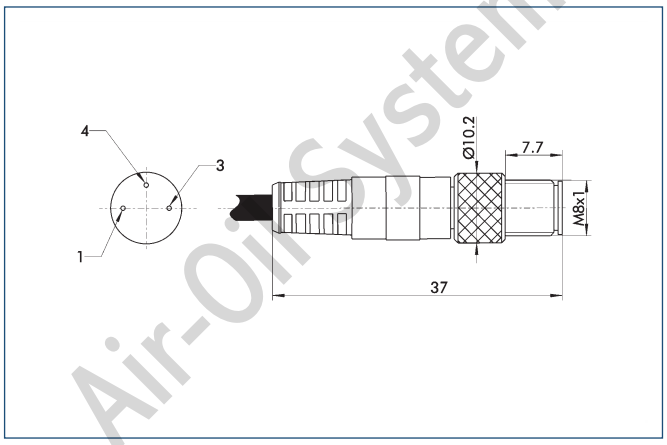


M5 connector



(72) Active sensor surface
(76) LED

M8 connector



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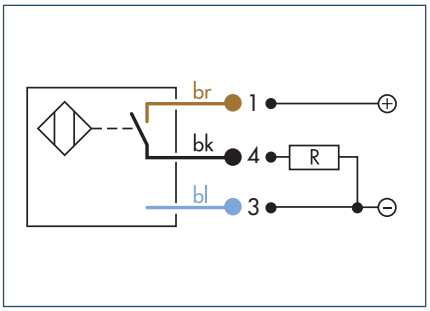
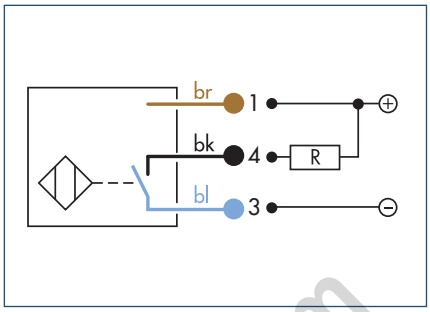
MMS 22-SA

Circuit diagram of closer



Circuit diagram of NPN closer



Technical data

Description		MMS 22-S-M5-PNP-SA	MMS 22-S-M5-NPN-SA	MMS 22-S-M8-PNP-SA	MMS 22-S-M8-NPN-SA	MMSK 22-S-PNP-SA	MMSK 22-S-NPN-SA
	ID	0301460	0301461	0301456	0301457	0301458	0301459
Switching function		Closer	Closer	Closer	Closer	Closer	Closer
Switching method		PNP	NPN	PNP	NPN	PNP	NPN
Cable length	[cm]	30.0	30.0	30.0	30.0	200.0	200.0
Cable connector/cable end		M5	M5	M8	M8	Open wire	Open wire
Type of voltage		DC	DC	DC	DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2	0.2	0.2	0.2
Min. ambient temperature	[°C]	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
Max. ambient temperature	[°C]	70.0	70.0	70.0	70.0	70.0	70.0
Typical switching time	[s]	0.001	0.001	0.001	0.001	0.001	0.001
IP rating (sensor)		67	67	67	67	67	67
IP rating (connector, plugged in)		67	67	67	67	67	67
LED display on sensor		Yes	Yes	Yes	Yes	Yes	Yes
Cable diameter	[mm]	2.1	2.1	2.1	2.1	2.1	2.1
Min. bending radius (dynamic)	[mm]	21.0	21.0	21.0	21.0	21.0	21.0
Min. bending radius (static)	[mm]	10.5	10.5	10.5	10.5	10.5	10.5
No. of wires		3	3	3	3	3	3
Wire cross section	[mm²]	0.14	0.14	0.14	0.14	0.14	0.14

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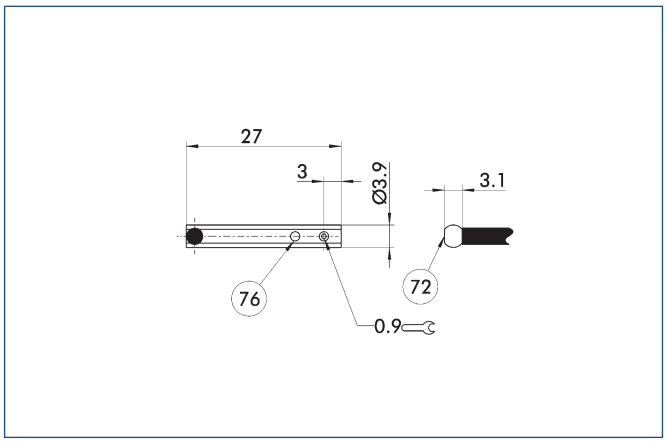
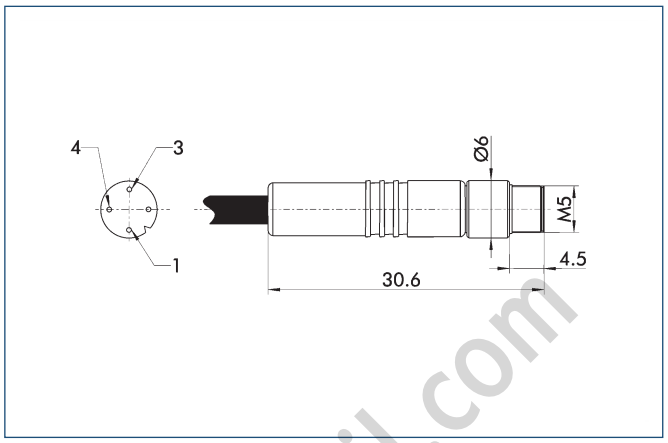
MMS 22-SA sensor

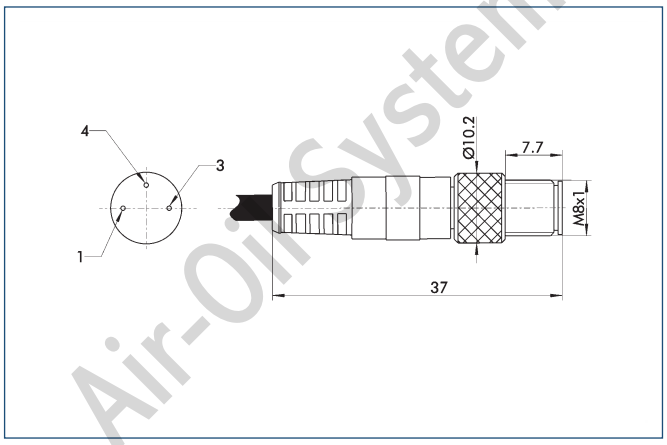


M5 connector



(72) Active sensor surface
(76) LED

M8 connector



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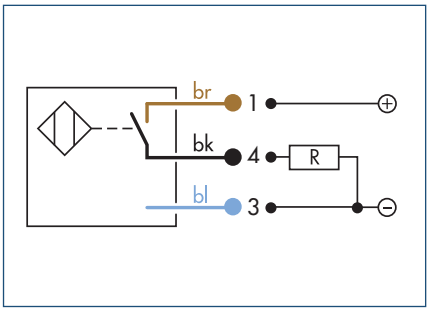

Technical data

Description		MMS 30-S-M8-PNP	MMS 30-S-M12-PNP	MMSK 30-S-PNP
	ID	0301471	0301571	0301563
Switching function		Closer	Closer	Closer
Switching method		PNP	PNP	PNP
Cable length	[cm]	30.0	30.0	200.0
Cable connector/cable end		M8	M12	Open wire
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0
Typical switching time	[s]	0.001	0.001	0.001
IP rating (sensor)		67	67	67
IP rating (connector, plugged in)		67	67	67
LED display on sensor		No	No	No
Cable diameter	[mm]	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5
No. of wires		3	3	3
Wire cross section	[mm^2]	0.14	0.14	0.14

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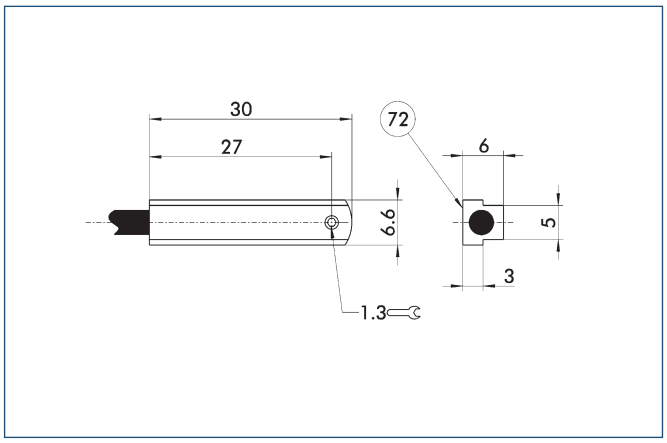
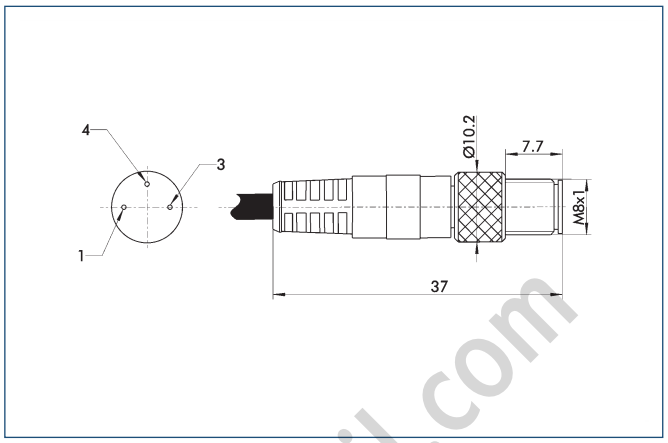
MMS 30 sensor

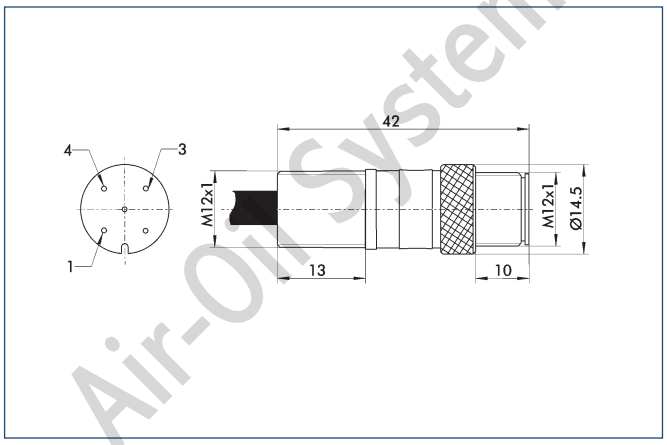


(72) Active sensor surface

M8 connector



M12 connector



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Sensor tester

The SST sensor tester enables the rapid testing and adjustment of inductive sensors, magnetic switches and reed contacts. The necessary power is supplied by a 9 V compound battery.

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Function description

The sensor is connected to the M8 – M12 or terminal connection of the sensor tester and the ON button pressed. The sensor position is displayed visually by LEDs and output acoustically via a signal buzzer.

Your advantages and benefits

Visual and acoustic signal
for simple function checking and adjustment

For 2 and 3-wire DC technology
enabling the connection of reed contacts, capacitive and inductive sensors

Tests possible without dismantling sensors
for short maintenance times

Connections for M8 and M12 or open cable ends possible
ensuring suitability for all SCHUNK sensors

PNP and NPN sensors can be tested

Operating voltage with 9 V compound battery
for mobile use

Automatic cut-off function
for an extended battery life

Application example

Area of application

Sensor testing and adjustment of the switching point (sensor calibration)

1. Sensor tester SST
2. Inductive proximity switches IN 80
3. Metal plate

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General information

Scope of delivery

Sensor tester incl. assembly and operating manual with manufacturer's declaration, 9 V compound battery

Notes

Please note that only one SST input (M8 or M12 or cable terminal input) can be used at once.

If the toggle switch is towards the sticker (nameplate), PNP is selected, if not, NPN

Technical data

Description	SST
ID	0301400
Battery	9 V DC (compound battery Type LR 61)
Connection 1	M12*1
Connection 2	M8*1
Connection 3	direct clamping
Housing material	plastic
IP class	20

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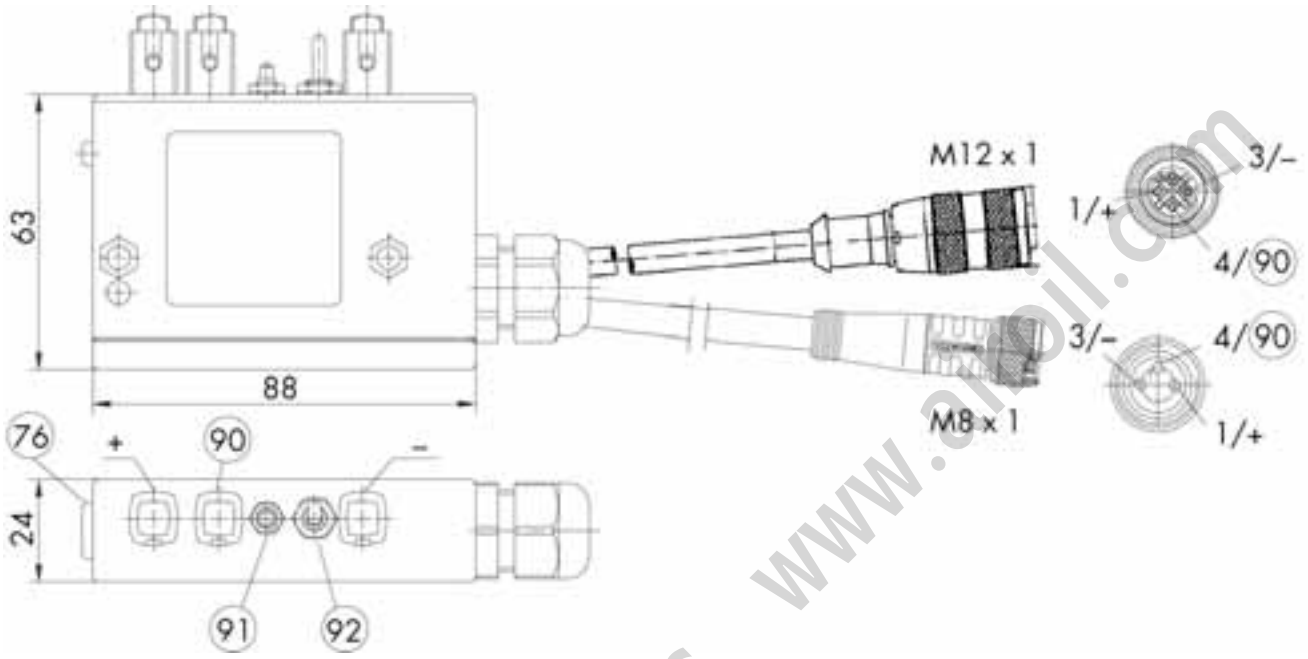
Main views



(76) LED
(90) Output
(91) ON button
(92) PNP / NPN changeover switch

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Adjustable housing for proximity switch

The adjustable housings enable the position of the sensor to be set once only. If the sensor is changed, the sensor position is retained.

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Function description

The sensor is inserted in the adjustable housing and fastened with the coupling ring. Next, the switching position is set. When the sensor is changed, the adjustable housing remains in the same location – only the sensor is changed by removing the coupling ring.

Your advantages and benefits

Setting has to be carried out only once
for rapid sensor replacement without recalibration

Corrosion-free material
for a long service life

Switches are protected against shocks
preventing mechanical destruction

Application example

Area of application

For universal use in the monitoring of automation modules with proximity switches

1 NHG adjustable housing

2 SRU 63 Flat Rotary Actuator

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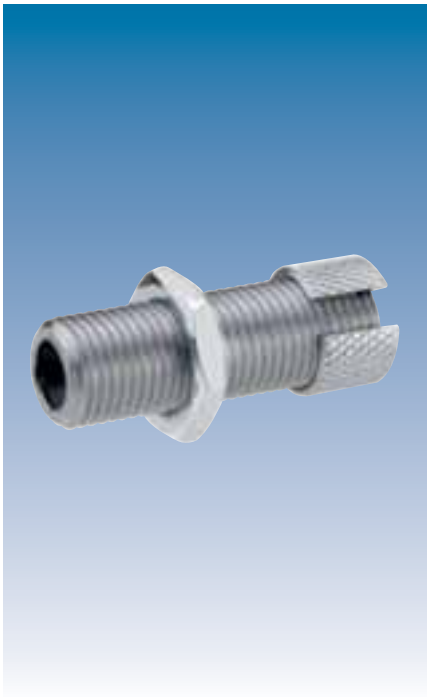
General information

Warranty
24 months

Notes

The coupling ring is slotted for fitting onto the cable.



Technical data

Description		NHG 5	NHG 8
	ID	9646006	9646007
Suitable sensor Ø		M5	M8
Min. sensor length	[mm]	31.5	24.5
Max. sensor length	[mm]	35.5	28.5
Weight	[kg]	0.008	0.006
Material		Steel	Steel

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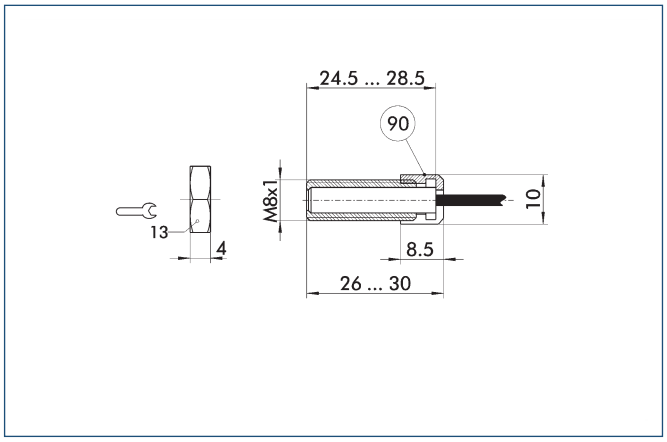
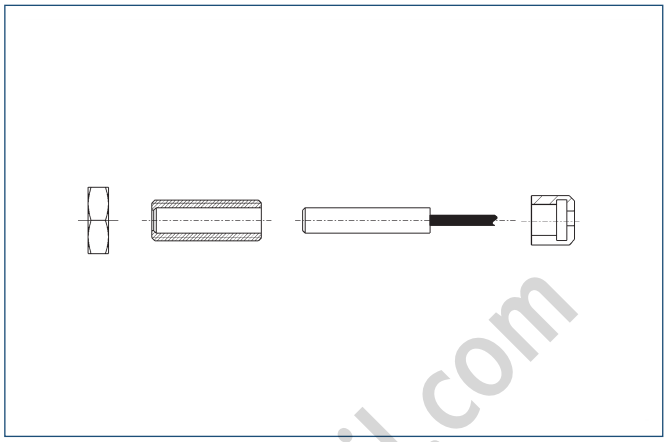
NHG 5

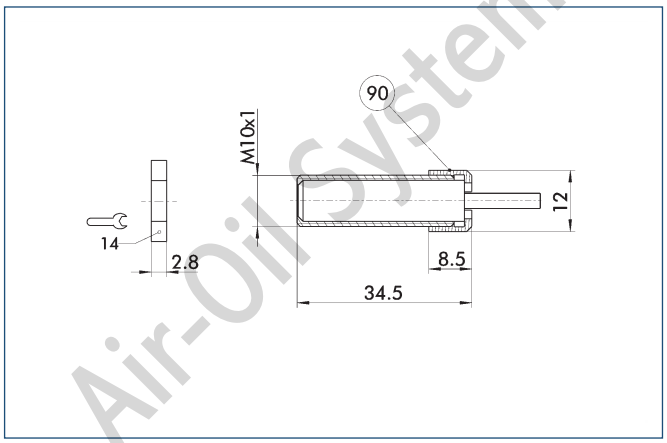


NHG 5 assembly

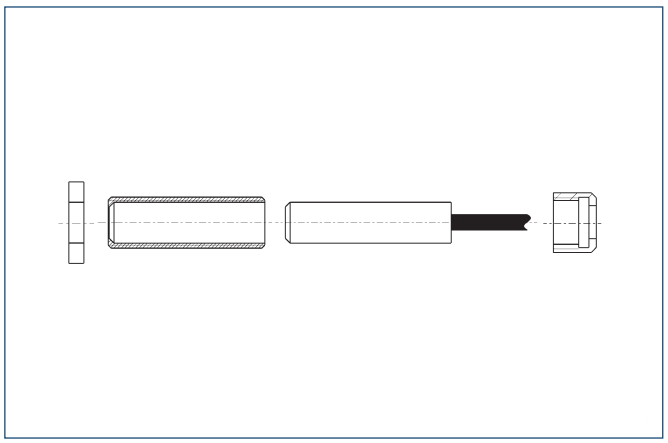


(90) Coupling ring is slotted for fitting onto the cable

NHG 8



NHG 8 assembly



(90) Coupling ring is slotted for fitting onto the cable

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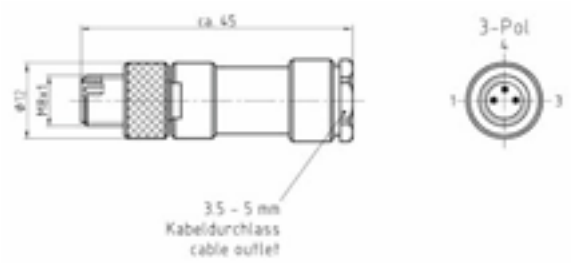
Configurable cable connectors, straight

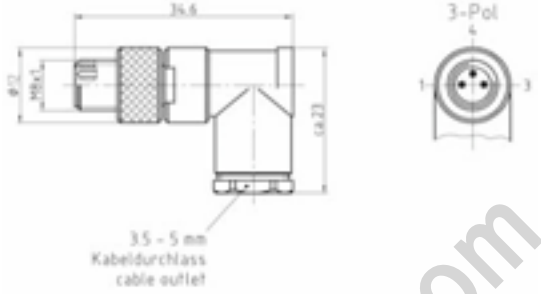
Pin connector



ID		0300050
Connection		3-pin
Maximum voltage	[V]	60 AC / 75 DC
Maximum amperage	[A]	4
Max. cross-section for connection	[mm²]	0.25
Protection class		IP 67
Housing material		PA

Configurable cable connectors, angled

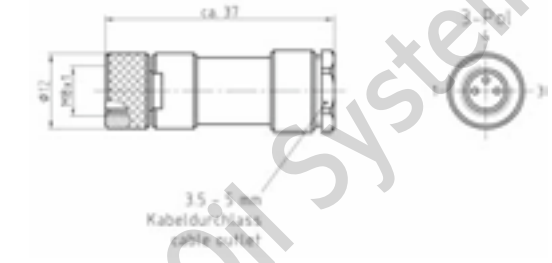
Pin connector



ID		0300051
Connection		3-pin
Maximum voltage	[V]	60 AC / 75 DC
Maximum amperage	[A]	4
Max. cross-section for connection	[mm²]	0.25
Protection class		IP 67
Housing material		PA

Configurable cable connectors, straight

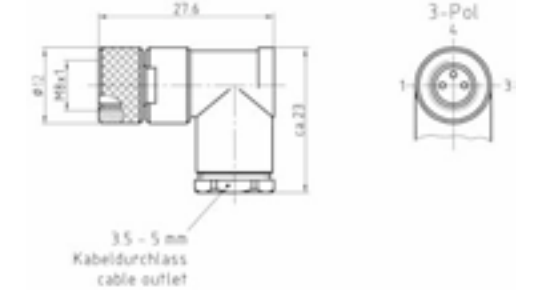
Socket connector



ID		0300052
Connection		3-pin
Maximum voltage	[V]	60 AC / 75 DC
Maximum amperage	[A]	4
Max. cross-section for connection	[mm²]	0.25
Protection class		IP 67
Housing material		PA

Configurable cable connectors, angled

Socket connector



ID		0300053
Connection		3-pin
Maximum voltage	[V]	60 AC / 75 DC
Maximum amperage	[A]	4
Max. cross-section for connection	[mm²]	0.25
Protection class		IP 67
Housing material		PA

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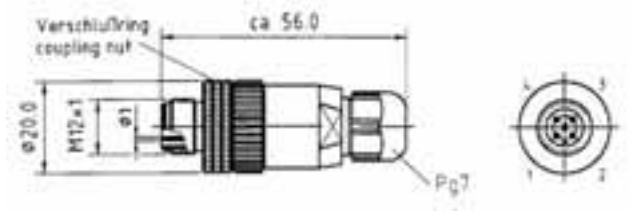
Configurable cable connectors, straight

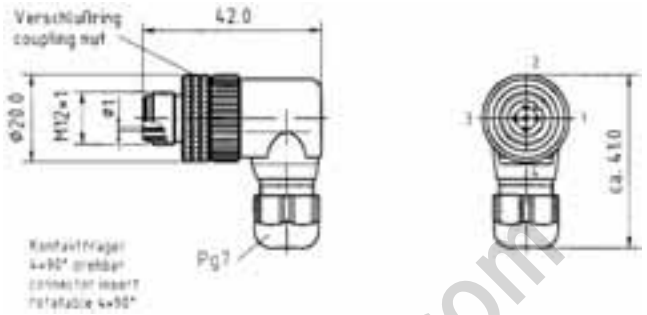
Sealed pin connector



ID		0300060
Connection		4-pin
Maximum voltage	[V]	250 AC / 300 DC
Maximum amperage	[A]	4
Max. cross-section for connection	[mm²]	0.75
Protection class		IP 68
Housing material		PA
Cable terminal area	[mm]	Ø 2.5 – Ø 6.5

Configurable cable connectors, angled

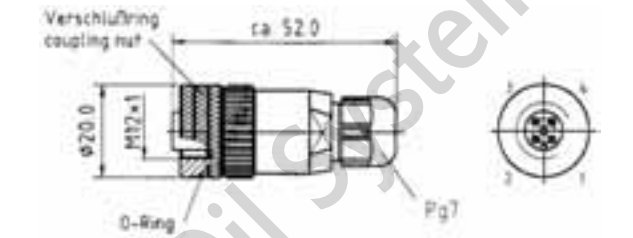
Sealed pin connector



ID		0300061
Connection		4-pin
Maximum voltage	[V]	250 AC / 300 DC
Maximum amperage	[A]	4
Max. cross-section for connection	[mm²]	0.75
Protection class		IP 68
Housing material		PA
Cable terminal area	[mm]	Ø 2.5 – Ø 6.5

Configurable cable connectors, straight

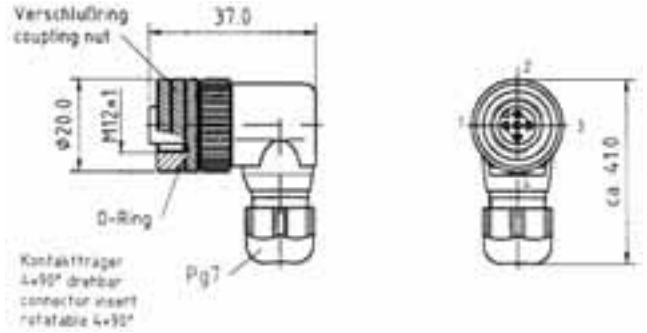
Sealed socket connector



ID		0300062
Connection		4-pin
Maximum voltage	[V]	250 AC / 300 DC
Maximum amperage	[A]	4
Max. cross-section for connection	[mm²]	0.75
Protection class		IP 68
Housing material		PA
Cable terminal area	[mm]	Ø 2.5 – Ø 6.5

Configurable cable connectors, angled

Sealed socket connector



ID		0300063
Connection		4-pin
Maximum voltage	[V]	250 AC / 300 DC
Maximum amperage	[A]	4
Max. cross-section for connection	[mm²]	0.75
Protection class		IP 68
Housing material		PA
Cable terminal area	[mm]	Ø 2.5 – Ø 6.5

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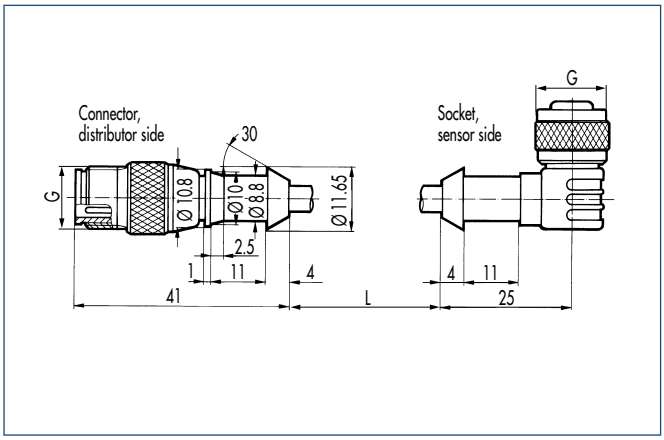
Accessories for Sensor Systems

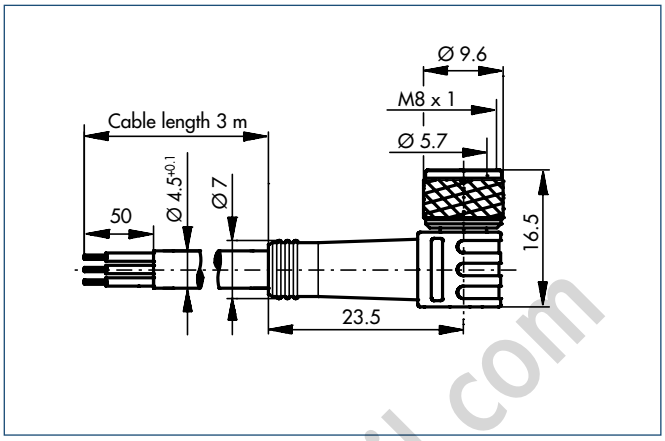
KV cable extensions for IN



KV cable extensions for IN proximity switches

Description	ID	Length L	Thread G
KV 3-M12	0301595	0.3 m	M12
KV 10-M12	0301596	1.0 m	M12
KV 20-M12	0301597	2.0 m	M12
KV 3-M8	0301495	0.3 m	M8
KV 10-M8	0301496	1.0 m	M8
KV 20-M8	0301497	2.0 m	M8

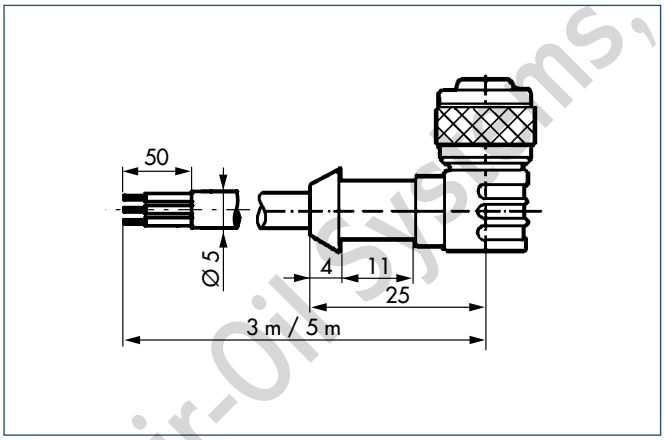
Feeder cable with right-angle plug WK



M8 connector, right-angle plug with 2 LEDs

Description	ID	Cable length
WK 3-M8	0301594	3 m
WK 5-M8	0301502	5 m
WK 3-M8 NPN	0301602	3 m
WK 5-M8 NPN	9641116	5 m

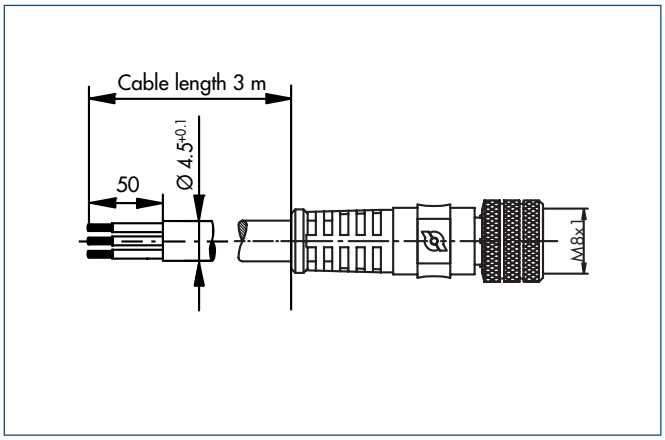
Feeder cable with right-angle plug W



M12 connector, right-angle plug with 2 LEDs

Description	ID	Cable length
W 3-M12	0301503	3 m
W 5-M12	0301507	5 m

Feeder cable with straight plug GK 3



M8 connector, straight plug with 2 LEDs

Description	ID	Cable length
GK 3-M8	0301622	3 m

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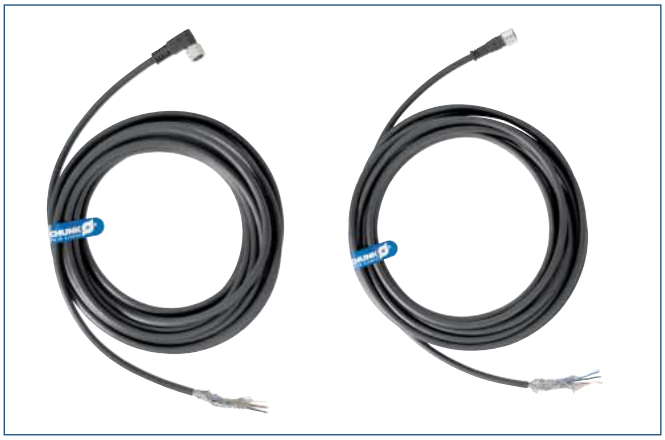
Interconnecting cable for MEG



Interconnecting cable for the electrical connection of MEG-K and MEG-EC 2-finger parallel grippers

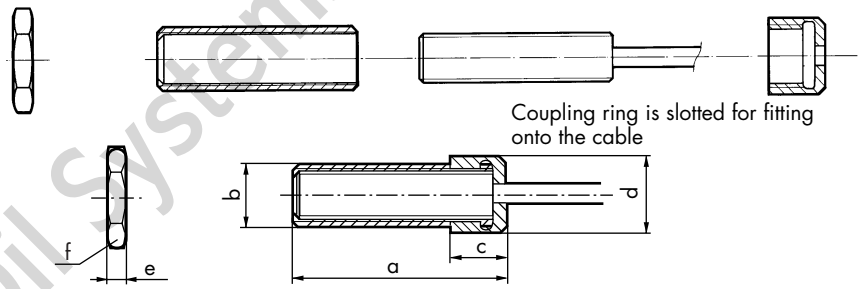
Description	ID	Cable length
MEG-EC-K5-W	**0307765**	5 m
MEG-EC-K10-W	**0307766**	10 m
MEG-EC-K5-G	**0307767**	5 m
MEG-EC-K10-G	**0307768**	10 m
MEG-IC-K5-W	**0307760**	5 m
MEG-IC-K10-W	**0307761**	10 m

Hybrid cable for PG/PR/PW/PDU/PSM

Interconnecting cable for the electrical connection of modules from the PowerCube series

Description	ID	Basic length	Extended length
PowerCube hybrid cable spiraled	**0307753**	0.3 m	0.8 m
PowerCube hybrid cable spiraled	**0307754**	0.46 m	1.5 m
PowerCube hybrid cable straight	**9941120**	By the meter	–

Adjustable housing for proximity switches



Description	NHG 5	NHG 8
ID	**9646006**	**9646007**
Suitable for type	M5 x 0.5 x 25	M8 x 1 x 32
a	27	34.5
b	M8 x 1	M10 x 1
c	8.5	8.5
d	10	12
e	4	2.8
f	SW 13	SW 14

Advantages of the NHG

- Setting has to be carried out only once
- Rapid replacement of faulty switches
- Corrosion-free material
- Setting does not have to be changed if proximity switch is replaced
- Switches are protected against mechanical influences

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Accessories for Sensor Systems

Product advantages

The SST sensor tester is an efficient assistant in service and assembly. For the rapid testing and adjustment of proximity sensors.

- Visual and acoustic signal
- For 2 and 3-wire DC technology
- Testing possible without dismantling sensors
- Connections for M8 and M12 or open cable ends possible
- PNP and NPN detection possible
- Operating voltage with 9 V compound battery
- "Auto-Power Off" function

Technical data

Description		SST
	ID	0301400
Supply voltage	[V]	9 DC (compound battery type 6 LR 61)
Internal operating voltage	[V]	15 DC
Protection class to DIN 40050		IP 20
LED display		Yes
Operating voltage display		Green LED
Function display		Yellow LED
Undervoltage display		Red LED
Housing		PA 6.6 blue

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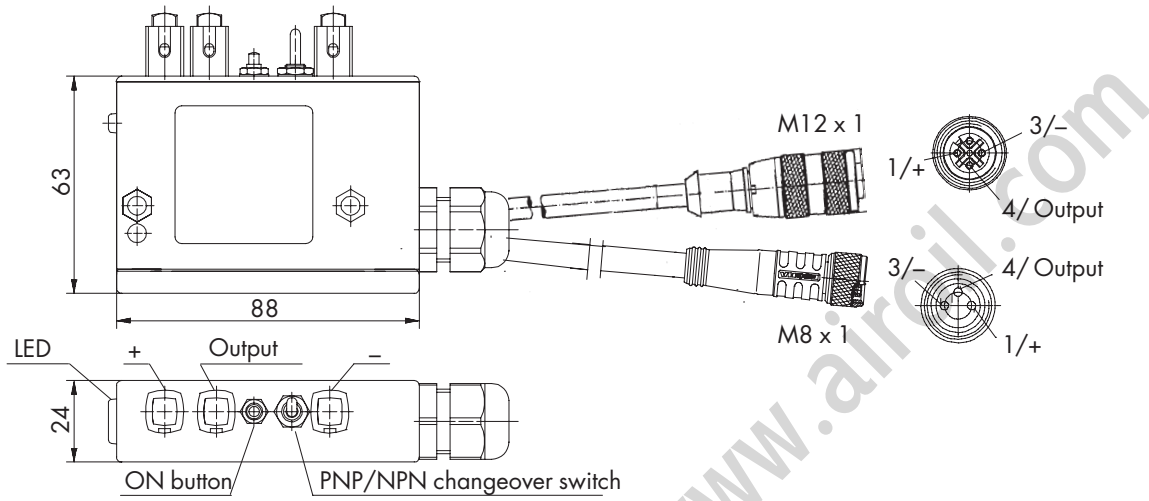
Main views



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Sensor Distributor

For connecting all SCHUNK sensors and sensor systems (IN/INK/MMS, etc.). In the versions 2 (V2), 4 (V4) and 8 (V8).

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Function description

Distributors collect incoming signals and forward them in a single cable. This eliminates with unnecessary cables. The switching state of the connected components can be checked by the LEDs integrated in the distributor.

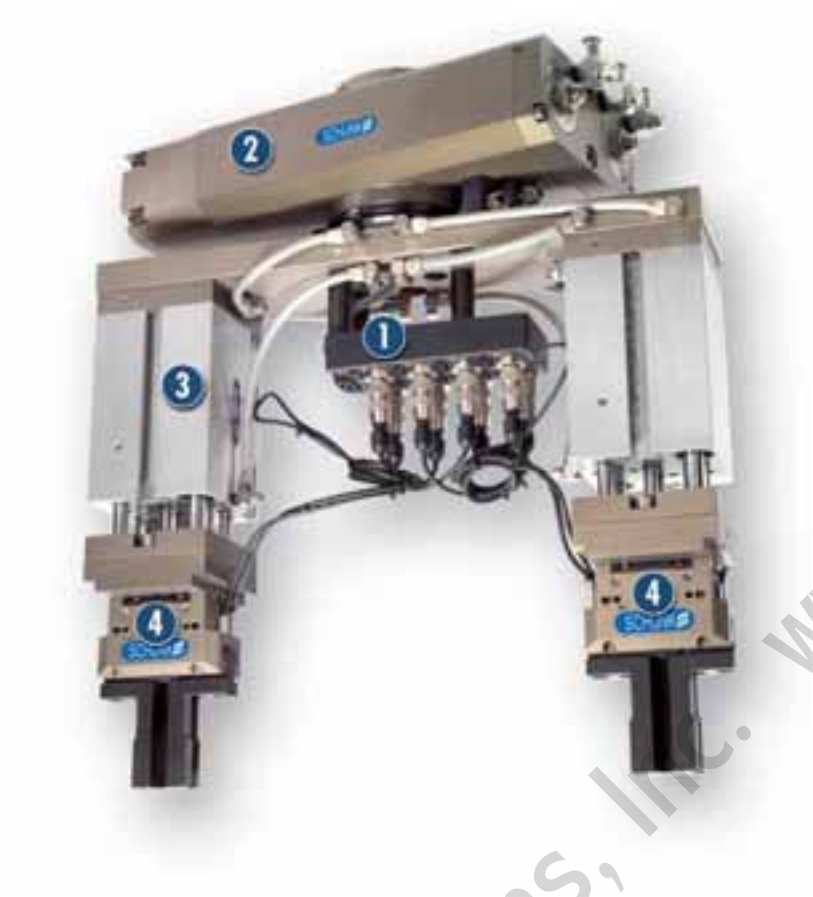
Your advantages and benefits

Status and switching display via LED
for directly checking the switching state

One feeder cable
making it ideal for feeding through signals

Sturdy PA housing
for a long life and resistance to many chemicals

Application example



Area of application

Sensor distributors from SCHUNK are universal and resistant to vibration, dust and humidity.
They are therefore suitable for use in both clean and dirty environments.

1. V 8 Sensor Distributor
2. SRU 63 Flat Rotary Actuator
3. PHE Stroke Module
4. PGN 2-Finger Parallel Gripper with workpiece-specific gripper fingers

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General information

Materials
Housing: PA 6 GF 30, black
Cable: PUR sheathing
Mounting
with screws
Protection class to DIN 40050
IP 67 when connected

Scope of delivery
Complete incl. sealing plugs for sealing unused connections, 1 set of labels
Warranty
24 months

Technical data

Description		V 2-M8	V 2-M12
	ID	0301900	0301589
Socket		M8*1	M12*1
Cable length	[m]	3.0	3.0
Nominal voltage	[V]	24.0	24.0
Min. voltage	[V]	10.0	10.0
Max. voltage	[V]	30.0	30.0
Max. current per wire	[A]	2.0	2.0
Max. overall current		2.0	2.0

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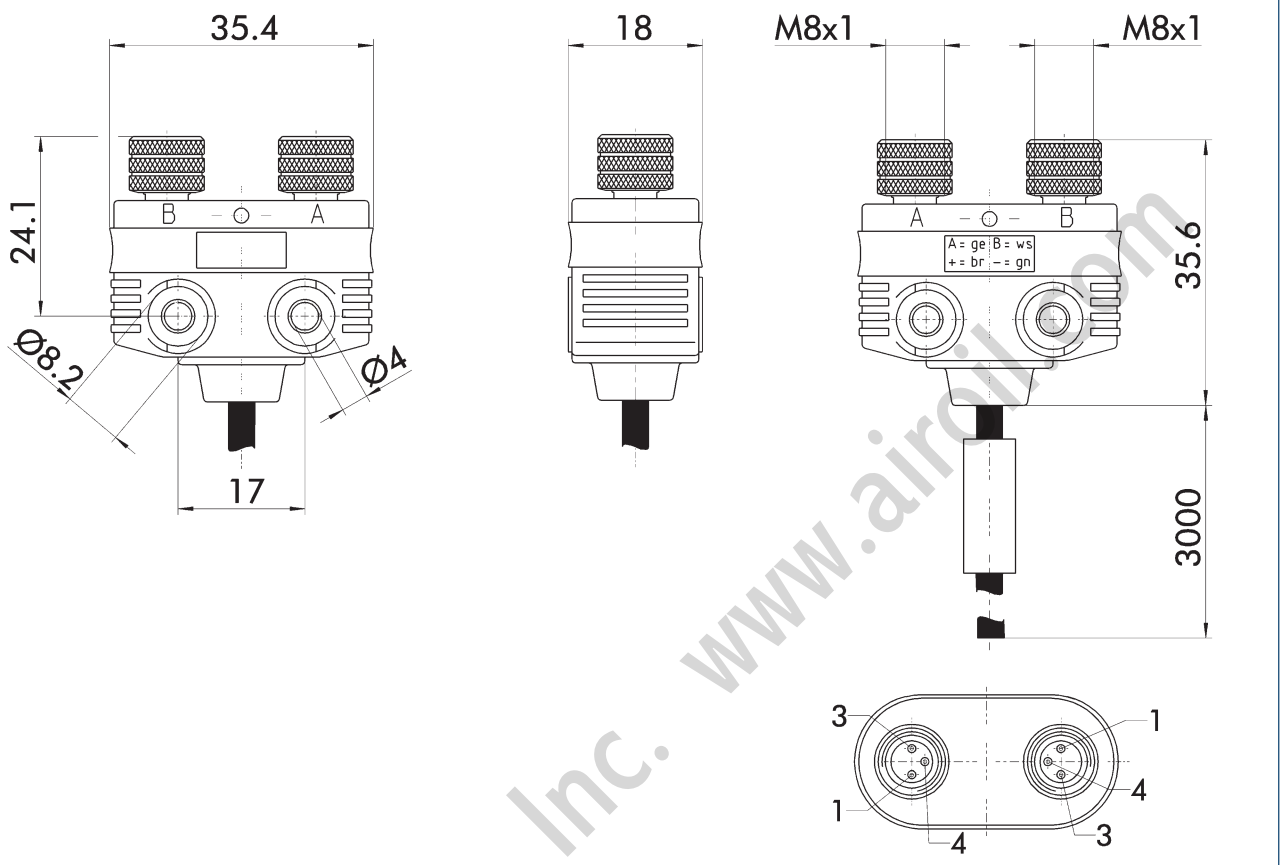
Main views of the V 2-M8



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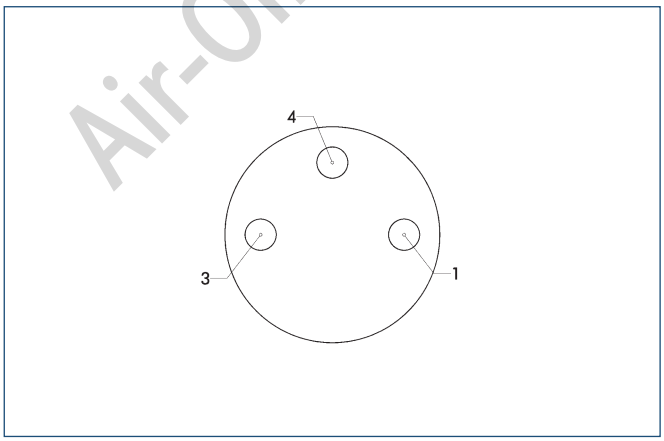
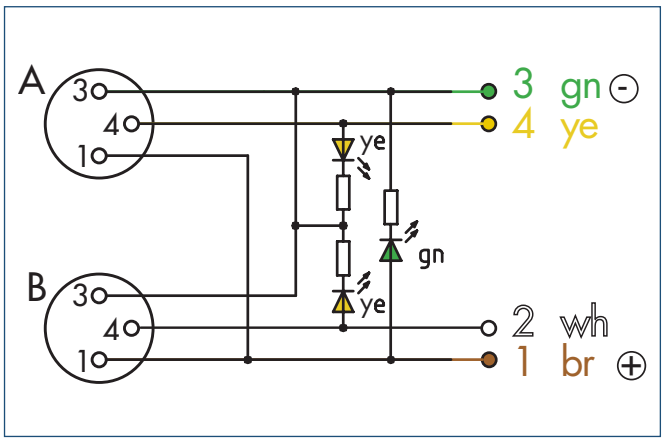
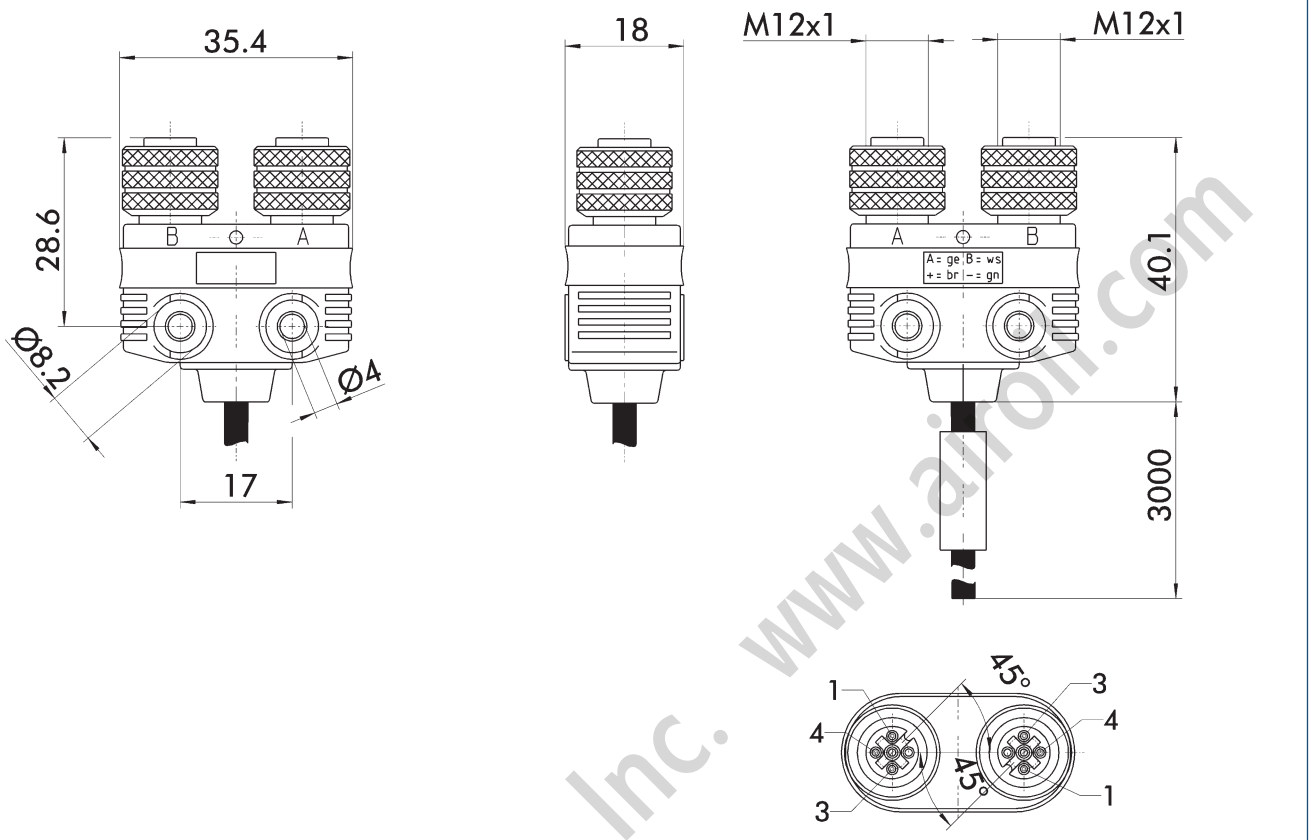
M8 contact assignment



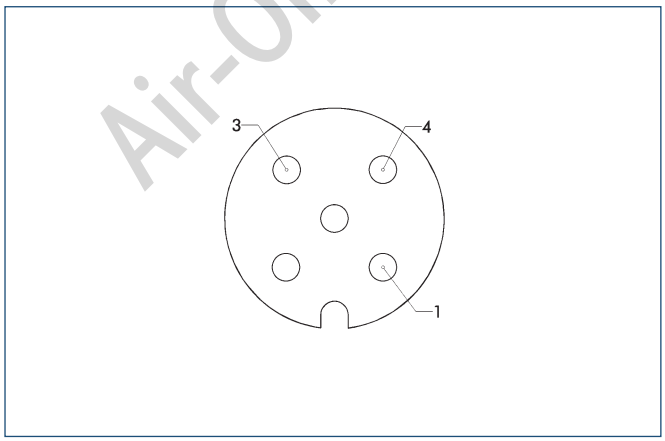
Wiring diagram



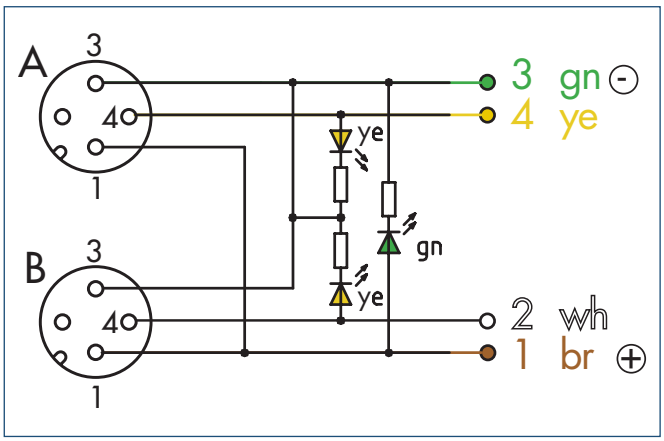
Main views of the V 2-M12



M12 contact assignment



Wiring diagram



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Technical data

Description		V 4-M8	V 4-M12
	ID	0301904	0301902
Socket		M8*1	M12*1
Cable length	[m]	3.0	3.0
Nominal voltage	[V]	24.0	24.0
Min. voltage	[V]	10.0	10.0
Max. voltage	[V]	30.0	30.0
Max. current per wire	[A]	2.0	2.0
Max. overall current		2.0	2.0

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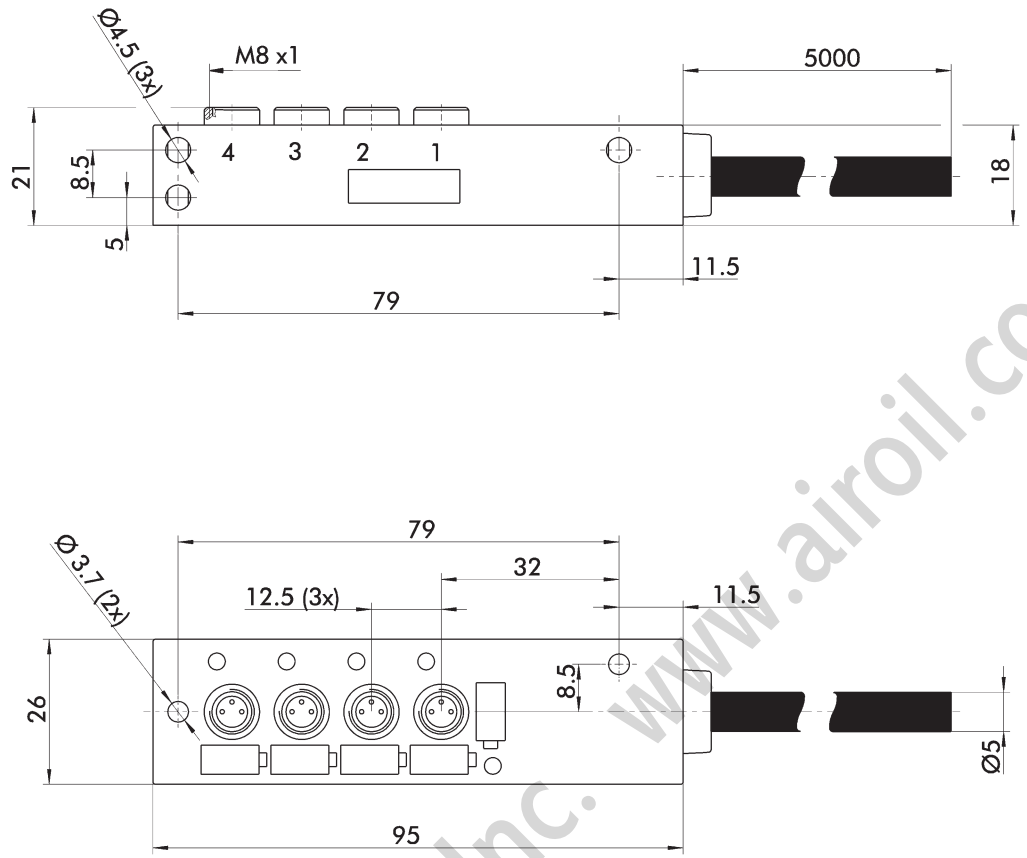
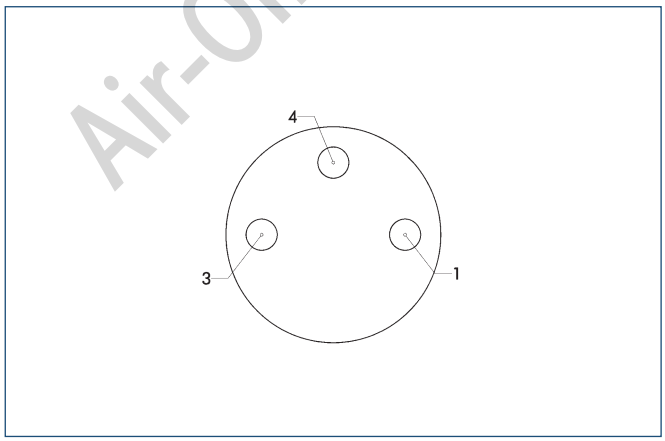
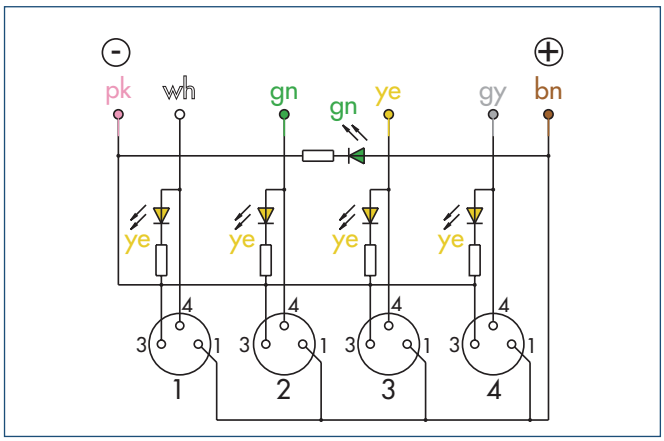
Main views of the V 4-M8



M8 contact assignment



Wiring diagram



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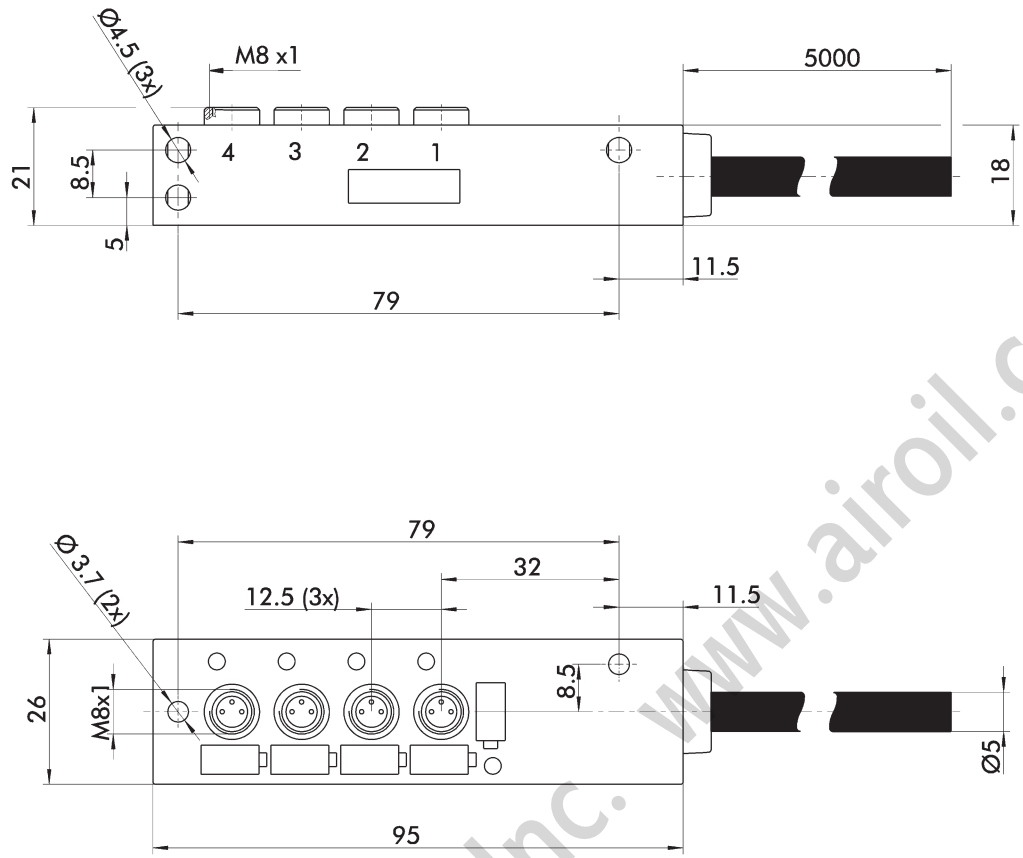
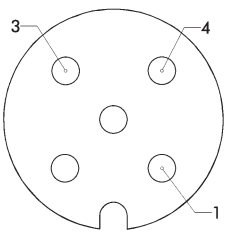
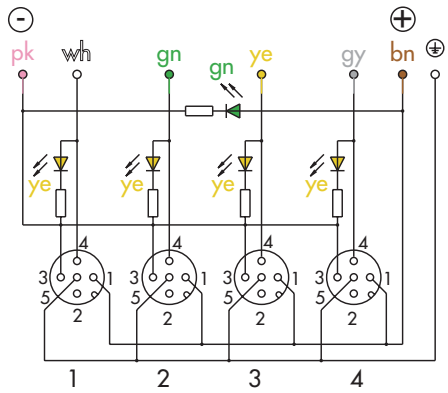
Main views of the V 4-M12



M12 contact assignment



Wiring diagram



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Technical data

Description		V 8-M8	V 8-M12
	ID	0301906	0301590
Socket		M8*1	M12*1
Cable length	[m]	3.0	3.0
Nominal voltage	[V]	24.0	24.0
Min. voltage	[V]	10.0	10.0
Max. voltage	[V]	30.0	30.0
Max. current per wire	[A]	2.0	2.0
Max. overall current		2.0	2.0

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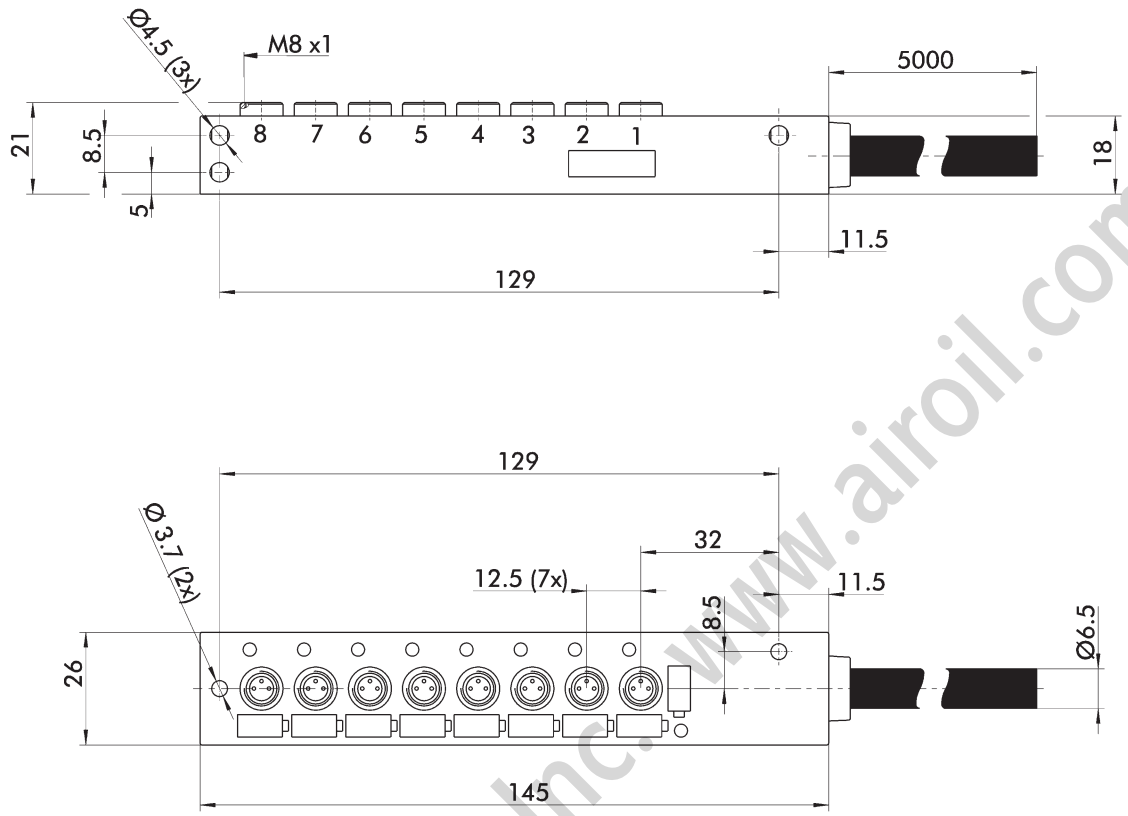
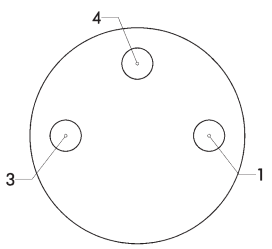
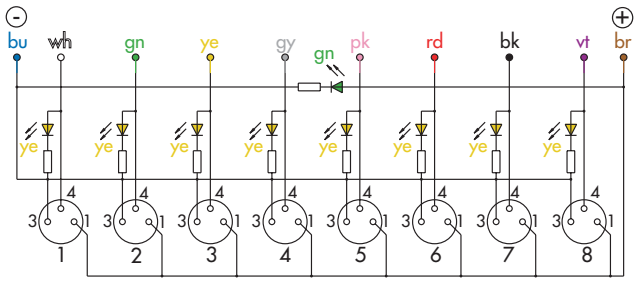
Main views of the V 8-M8



M8 contact assignment



Wiring diagram



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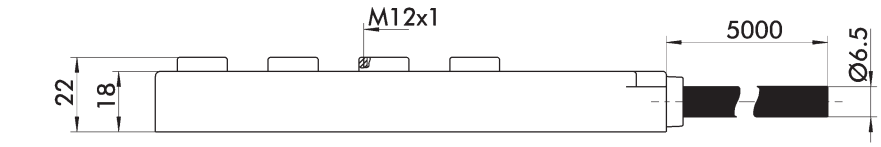
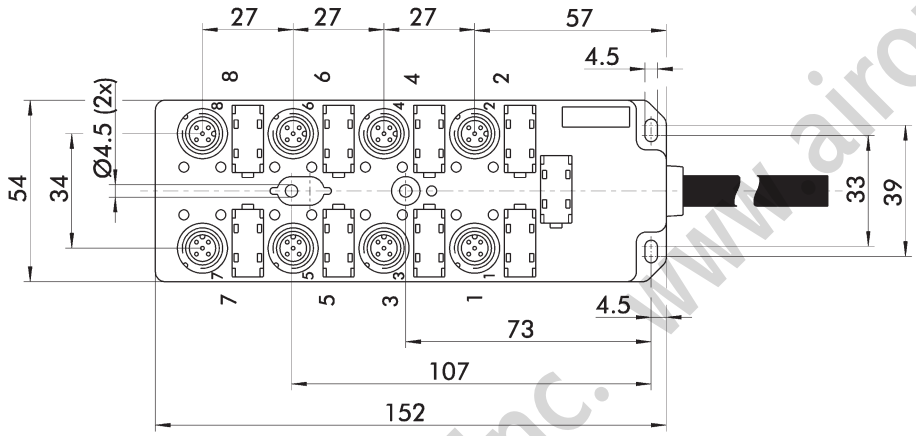
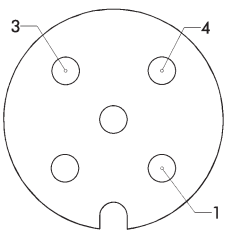
Main views of the V 8-M12

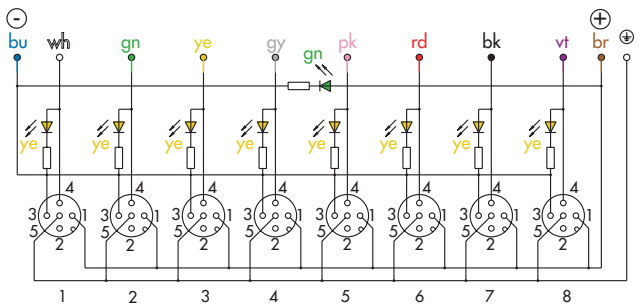




M12 contact assignment



Wiring diagram



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Analog Position Sensor System

Mechanical, analog system comprising sensor and processor for accurately recording the position of gripper jaws.

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Function description

The high-resolution APS-M1S sensor is actuated by an inclined surface (mounting kit), which is attached to the gripper base jaw. The changes in position of the sensor are recorded, amplified, prepared and made available to an analog output by the APS-M1E processor.

Your advantages and benefits

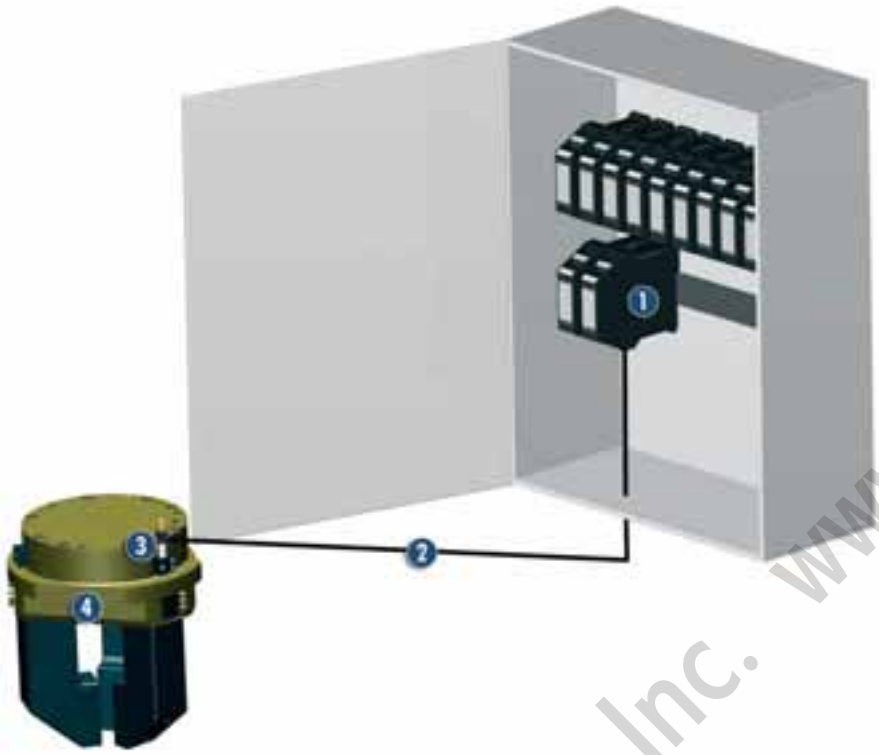
Position output
as voltage (V) or current (mA)

Precise measuring system
also for long strokes

Compact design
for space-saving installation in any control cabinet

Conforms to CE
for absolute safety and long life during permanent operation

Application example



Area of application

for the precise measurement of the gripper jaw position in clean environments

1. APS-M1E Processor
2. APS-K7 Extension Cable
3. APS-M1S Sensor
4. PZN-plus 100
   3-Finger Centric Gripper

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General information

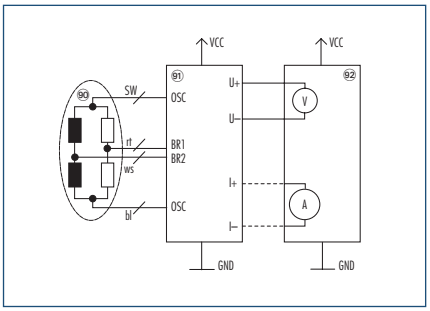
Warranty
24 months
Ordering
The sensor and processor must be ordered as individual items.

Notes

The accuracy of the complete system as stated here is available from a stroke per jaw of 7 mm. The entire range of the sensor cannot be exploited with smaller strokes. The relative accuracy (ratio of repeat accuracy to jaw stroke) decreases, the absolute repeat accuracy (in mm) is the same as for a gripper with a 7 mm stroke, i.e. 0.021 mm.

APS-M1

Wiring diagram



(90) APS-M1S Sensor
(91) APS-M1E Electronic Processor
(92) Automation device, e.g. S7-300

ⓘ When using an APS system, a mounting kit, APS sensor (APS-M1S) and processor (APS-M1E) are required for each gripper. The mounting kits can be found with the grippers. Mounting kits for other components/grippers are available on request. The sensor has a 3 m molded cable.

Technical data

Description		APS-M1S
	ID	0302062
Measuring stroke	[mm]	2.0
Measuring accuracy	[mm]	0.004
Nominal current input	[A]	0.023
Tightness		67
Thermal drift of zero signal	[%/10K]	0.1
Thermal drift of amplification factor	[%/10K]	0.2
Min. ambient temperature	[°C]	10.0
Max. ambient temperature	[°C]	60.0
Weight	[kg]	0.16
Sensor material		Steel
Cable sheath		PUR

Description		APS-M1E
	ID	0302064
Supply voltage		DC
Nominal voltage	[V]	24.0
Min. voltage	[V]	22.0
Max. voltage	[V]	26.0
Nominal current	[A]	0.1
IP rating		20
Min. ambient temperature	[°C]	0.0
Max. ambient temperature	[°C]	60.0
Repeat accuracy (sensor and processor)	[mm]	0.3
Weight	[kg]	0.16
Housing material		PA
Output signal		0..10 V DC | 4..20 mA
Mounting		top hat rail

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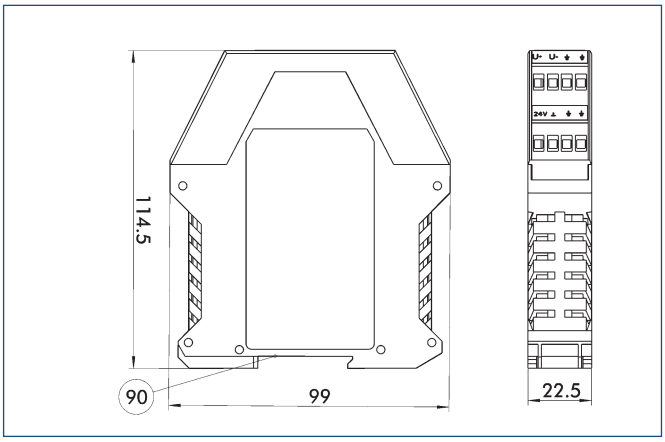
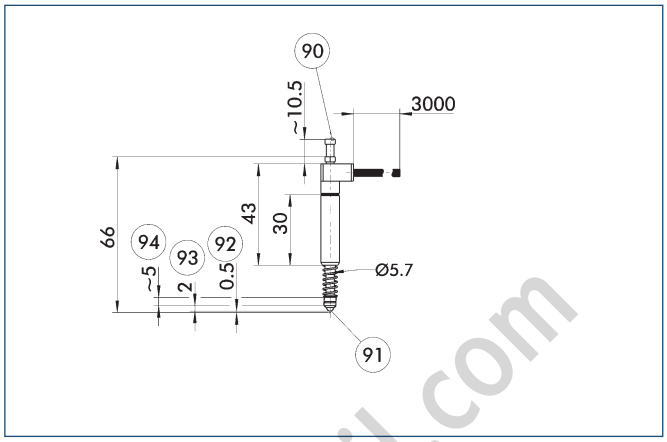
APS processor



(90) Groove for mounting rail

APS sensor



(90) Position with retracted feeler rod
(91) Carbide ball 1/8"
(92) Initial stroke
(93) Range of measurement
(94) Free stroke

APS-K extension cable

As an option, an extension cable can be connected between the sensor and the processor. (The max. cable length between the sensor and the processor is 10 m, between the processor and its controller (SPC) max. 1 m.)

Description	ID	Length
APS-K2	0302066	2.0 m
APS-K7	0302068	7.0 m

Mounting kits

The suitable mounting kit is specified with the gripper.

ID	Description
0302075	AS-APS-M1-64/1
0302076	AS-APS-M1-64/2
0302077	AS-APS-M1-80/1
0302078	AS-APS-M1-80/2
0302079	AS-APS-M1-100/1
0302080	AS-APS-M1-100/2
0302081	AS-APS-M1-125/1
0302082	AS-APS-M1-125/2
0302083	AS-APS-M1-160/1 and 240/2
0302084	AS-APS-M1-160/2
0302085	AS-APS-M1-200/1 and 380/2
0302086	AS-APS-M1-200/2
0302087	AS-APS-M1-240/1
0302088	AS-APS-M1-300/1
0302089	AS-APS-M1-300/2
0302090	AS-APS-M1-380/1

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FPS Flexible Position Sensor

The optional FPS sensor system measures the position of gripper jaws. It then indicates in which of the five freely teachable zones the jaws currently are. Alternatively, the jaw position can be read out via the "FPS Controller" software (FPS-F5/ F5T only).

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Function description

A permanent magnet that moves with the base jaw provides the FPS sensor with its magnetic field. The strength of this permeation changes depends on the distance of the magnet from the sensor. This variable is recorded, evaluated and output by the FPS electronic processor.

Your advantages and benefits

Simplest operation
with just two buttons, or with the machine control system using free control lines

Simple start-up
as the customer can set all positions during the teaching operation

Five digital outputs
for greater economy as compared to individual sensors

Small distance between two switching points, adjustable

Resistant to contamination
through non-ferromagnetic materials

Function and switching status display
via LEDs on the electronic processor

Conforms to CE
for safety and long life during permanent operation

Digital technology
for resistance to interference

Additional advantages of the FPS-F5 and F5 T
- Measuring functionality
- Communication and remote maintenance via RS-232 protocol
- Position programming and readout of switching points
- Monitoring of temperature and input voltage
- Visualization via PC possible
- Data logging
- Calibration of system to gripper stroke
- Intelligent access authorization
- Adaptation to new product during the process

Application example

Area of application

Position sensing of gripper jaws up to a stroke of approx. 30 mm in environments that may be clean or dirty, but are free from steel chips.

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General information

Resolution

The resolution is the minimum stroke difference that is required in order to reliably distinguish between two signals. Used in conjunction with most SCHUNK grippers, the FPS system achieves a resolution of 1 – 3 % of a jaw stroke. However, in some grippers a resolution of only 10 % is achieved due to the nature of the design. More precise resolutions may be reached, however, with the use of special solutions. Please contact us regarding the resolution/accuracy of the FPS system.

Connector for the electronic processor (enclosed)

12-pin circular connector (Binder type series 723, waterproof) suitable for connection cables with a diameter of 6 to 8 mm, recommended conductor cross-section 0.14 mm^2 (max. 0.25 mm^2)

Ambient conditions

Use within the range of strong magnetic fields is not recommended. Neither the FPS sensor nor the FPS magnet may come into contact with ferromagnetic dust, chips or other substances.

Display

Five colored LEDs

Range of measurement

5 to 30 mm with SCHUNK magnet (NdFeB magnet cut to size, dimensions (6 x 25 mm x L) with various lengths L depending on the part of the range of measurement

Material

Processor: Plastic PA 6
Cable: PU, resistant to coolants/lubricants

Warranty

24 months

Notes

All data were determined on the basis of SCHUNK attachments and specifications. Please consult us regarding use of the sensor with modules from other manufacturers.

FPS sensors

Either the FPS-S13 or the FPS-SM8 sensor is required, depending on the type of gripper. Each sensor is connected to its own FPS-A5/F5/F5T processor.

Description		FPS-S 13	FPS-S M8
	ID	0301705	0301704
Cable diameter	[mm]	3.5	3.5
Cable length	[cm]	30.0	30.0
Connection of FPS on processor side		M8	M8
Weight	[kg]	0,01	0,015
Min. ambient temperature	[°C]	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0
IP rating (sensor)		65	65
IP rating (connector, plugged in)		65	65
Min. bending radius (dynamic)	[mm]	17.5	17.5
Min. bending radius (static)	[mm]	35.0	35.0

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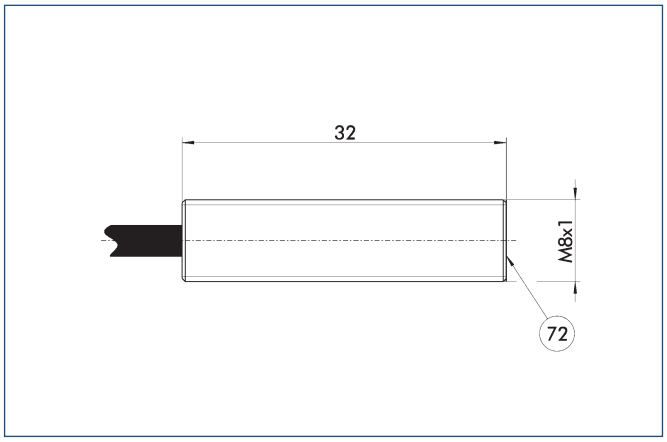
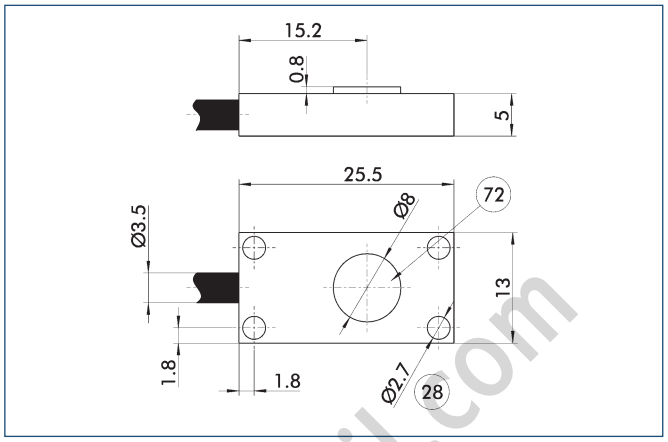
S-M8 sensor



72 Active sensor surface

S13 sensor



28 Through-bore
72 Active sensor surface

Cable extensions

Max. extension between FPS sensor and electronic processor for trouble-free operation: 1 m

Description	ID	Length
KV 05	0301598	0.5 m
KV 1	0301599	1.0 m

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FPS-A5/FPS-F5 Processor

Measurement of the gripper stroke using sensors, assignment to the positions/zones "Open", "Intermediate position 1,2,3" or "Closed", and output of a position signal. A maximum of four switching points/five zones are freely programmable. FPS-F5 additionally with RS-232 interface, remote maintenance, measuring functionality, system calibration to the millimeter, temperature and voltage monitoring.

FPS-F5T processor

Measurement of the gripper stroke using sensors, comparison with target value, output of tolerance information "Within tolerance", "Above tolerance" or "Below tolerance", plus "Open" and "Closed". Otherwise, like the FPS-F5.

Description		FPS-A5	FPS-F5	FPS-F5 T
	ID	0301802	0301805	0301807
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage (DC)	[V]	10.0	10.0	10.0
Max. voltage (DC)	[V]	30.0	30.0	30.0
Nominal current (DC)	[A]	0.01	0.01	0.01
Weight	[kg]	0.06	0.06	0.06
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0
IP rating		65	65	65

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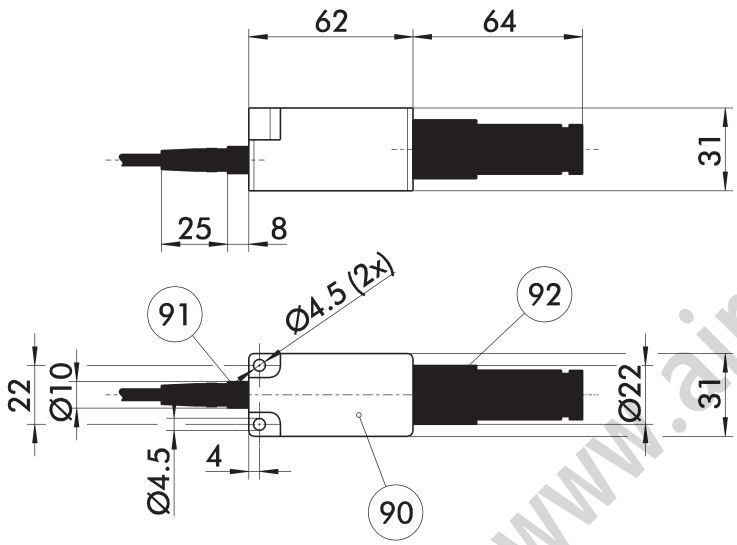
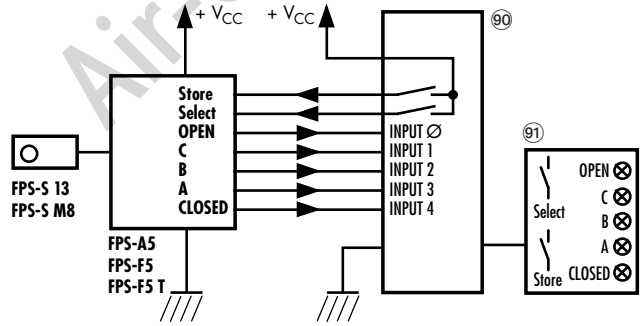
Main views



90 Transparent plastic cover, over control and display panel
91 Connector on sensor side
92 Connector on control cabinet side

Wiring diagram



90 SPC/PLC
91 Machine panel (provided by customer)

For the contact assignment of the connections on the PLC side, please refer to the user's manual.

Cable extension (open wires)

From the electronic processor to the control cabinet

Description	ID	Length
KV 10	0301801	10.0 m

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FPS Software

Software for FPS-F5/F5 T

The free FPS Controller software allows the user to monitor the FPS processor via an RS-232 interface. As a result, the FPS system can be calibrated to stroke measurement, the position can be read out and the FPS processor can be programmed.
The FPS software also provides access to all auxiliary functions (see above).

Description	Software
ID (CD)	0301806
Download	www.schunk.com
Operating system	MS Windows

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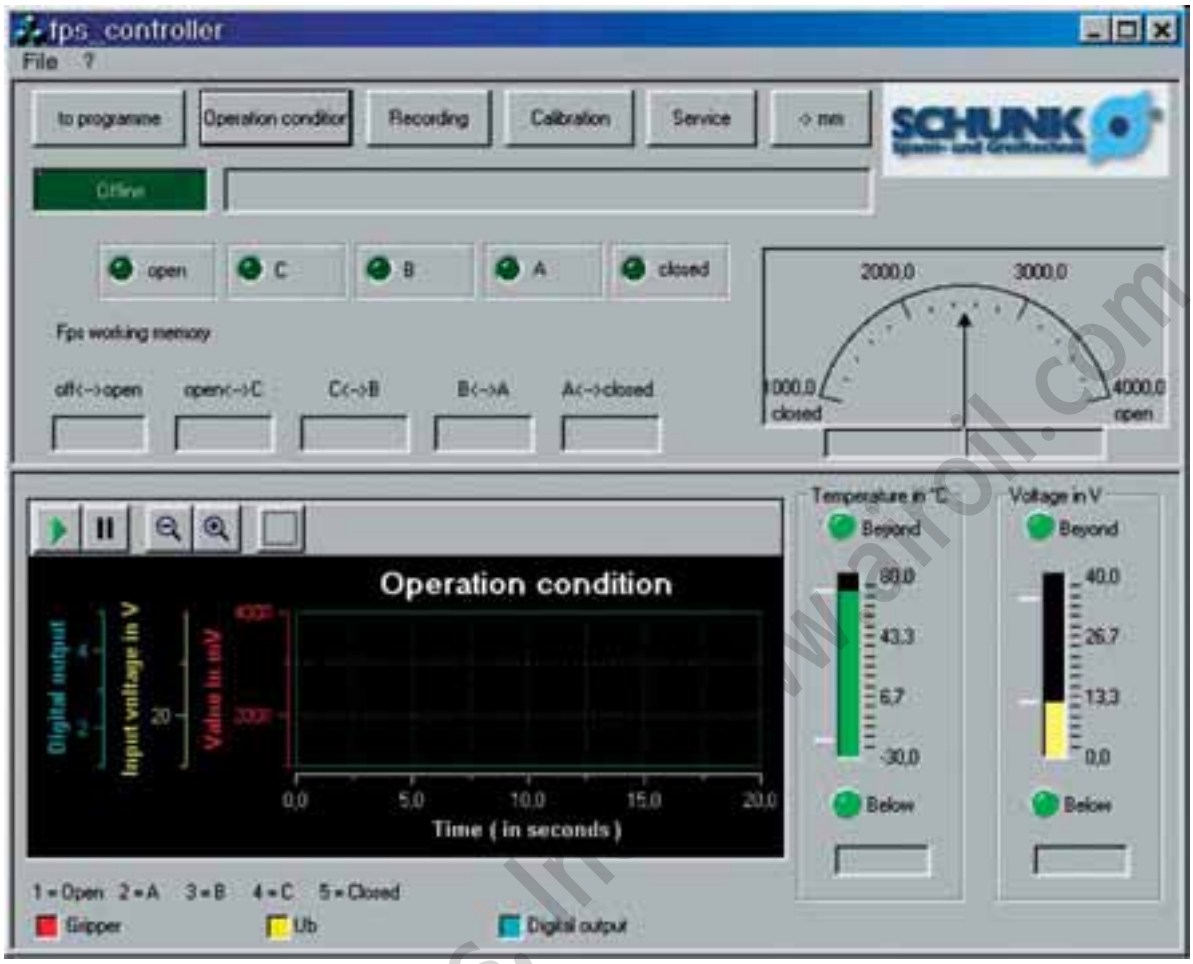
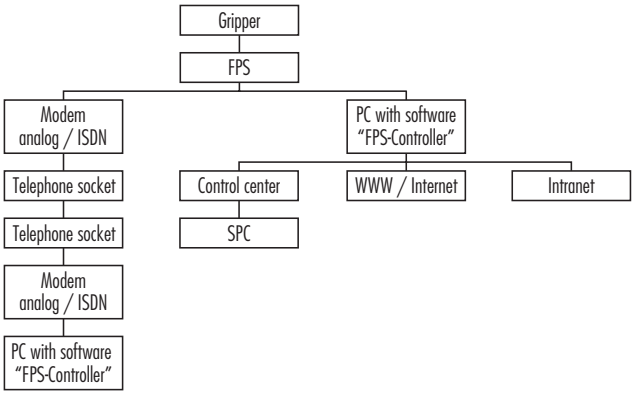
Screenshot software



Set-up with laptop

Possible connection methods



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Force Measuring System

The FMS force measuring system is used for measuring the gripping forces during the gripping process. This opens up numerous new possibilities both during start-up and in the production process.

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Function description

The FMS intermediate jaws are screwed on between the gripper base jaw and the top jaw, which comes in contact with the workpiece. Gripping forces on the top jaw result in a flow of force through the FMS intermediate jaw. Intelligently arranged strain gauges inside the intermediate jaw react to the resulting deformation. The FMS processor detects the change in the strain gauges and emits an analog signal indicating the force.

Your advantages and benefits

Simplest handling
via a control line that is directly connected to an SPC

Easy-to-perform measurement
of the actual, active gripping force

Result output via analog voltage value

Simple, linear relationship
between output voltage and gripping force

Simple zero balancing
with button or via control line

Integrated LCD
for visual monitoring

Easy assembly

Dirt-proof and waterproof
also for use in extreme ambient conditions.

Application example

1 PGN-plus 100 AS
2-Finger Parallel Gripper

2 FMS-ZBA Intermediate Jaw
with Sensor (active)

3 FMS-ZBP Intermediate Jaw
without Sensor (passive)

4 Workpiece-specific Gripper Finger

5 Electronic Processor

Area of application

Gripping force control

By sending control signals to the proportional valve that supplies the gripper, the PLC can influence the automatically measured gripping force.

Teaching robots

When gripping firmly fixed workpieces, the teaching of robots is simple and precise. Symmetrical gripping only takes place if the left- and right-hand gripper jaws apply the same force – thereby protecting the gripper and the robot.

Static grip force monitoring

- Monitoring the grip force as the jaws close prevents the workpiece from being dropped when movement initiates.
- Overload protection by monitoring the max. permitted force, which can be triggered e.g. by an inadvertent increase in pressure, by off-center gripping or the incorrect positioning of the workpiece.
- Preventive maintenance by replacing grippers in good time when there is a decline in the gripping force. This avoids unexpected manufacturing down-times.

Dynamic grip force monitoring

- The effect of acceleration forces on the gripper jaws can be recorded and the motion sequence modified if necessary.
- Component monitoring during highly dynamic movements.

Measuring and teaching processes

- Dimensional checking of the gripped component on the basis of an inserted reference component. If the component to be measured differs by more than ±0.05 mm from the reference component, teaching can take place. If the difference is smaller, the precise dimensions can be measured accurately even to within ±0.002 mm.
- Gauging the weight of the component by measuring the force due to weight of the component on the gripper fingers.

General information

For all PGN-plus and PZN-plus grippers

as well as for all grippers with identical finger connection diagram, for other grippers on request (remember to ask about the delivery time!)

Conforms to CE

for absolute safety and long life during permanent operation

Warranty

24 months

Notes

The FMS force measuring system allows you to measure forces that act on the base jaw in the direction of the jaw movement. Up to three active (equipped with sensors) FMS-ZBA intermediate jaws are required for this purpose, depending on the application. The remaining base jaws are equipped with FMS-ZBP passive intermediate jaws (without sensors). Each FMS-ZBA active intermediate jaw requires an FMS-A1 electronic processor for evaluation, and an FMS-AK connection cable for connecting the electronic processor to an PLC or a control cabinet.

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FMS Processor

Each FMS-ZBA active intermediate jaw requires an electronic processor.
The FMS-A1 processor is required for intermediate jaw sizes up to 125, the FMS-A2 processor from size 160. The electronic processor is used to prepare, display and forward the measurement results. It is equipped with a housing connector and socket for connecting the force measuring jaw and the connection cable.

Description		FMS-A1	FMS-A2
	ID	0301810	0301811
Measuring accuracy	[%]	3.0	3.0
Output signal		- 5VDC.. +5VDC	- 5VDC.. +5VDC
Type of voltage		DC	DC
Nominal voltage	[V]	24.0	24.0
Min. voltage	[V]	18.0	18.0
Max. voltage	[V]	30.0	30.0
Nominal current	[A]	0.0045	0.0045
IP rating		67	67
Weight	[kg]	63.0	63.0

ⓘ The output voltage is linear to the forces occurring at the gripper fingers.
The bandwidth of the output signal is not fully exploited by every active intermediate jaw.
Zero balancing must be performed prior to measurement.
The limit class A according to EN 61326 is complied with.
The test to EN 61000-4-2, EN 61000-4-3, EN 61000-4-4 and EN 61000-4-6 was passed in conformity with EN 61326.

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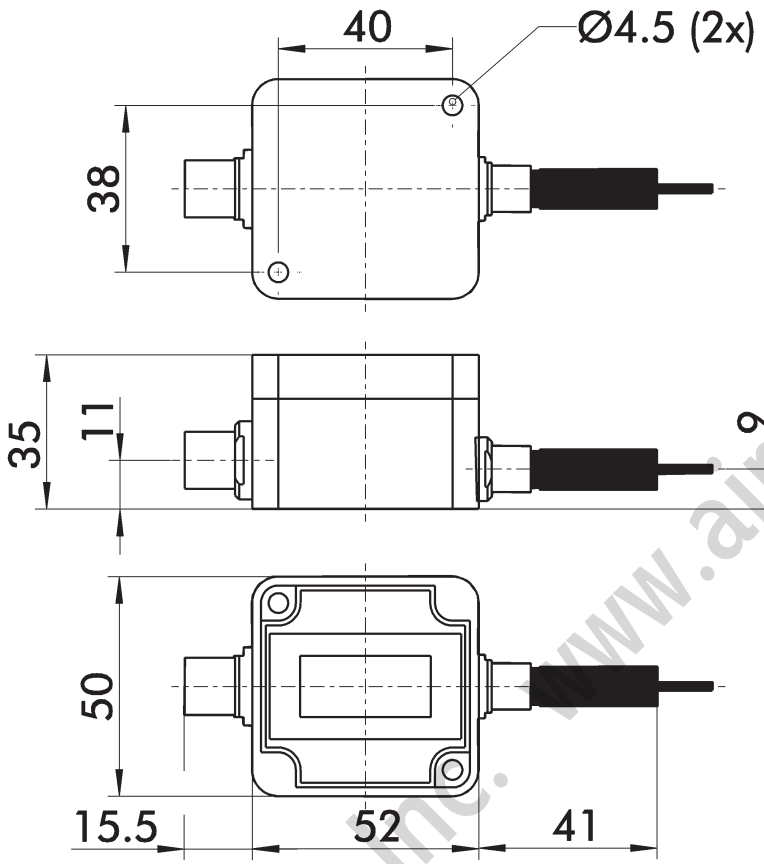
Main views



FMS-AK connection cable

The FMS-AK connection cable is used for connecting the electronic processor to a control cabinet or an PLC. A cable bushing is fitted on the side of the electronic processor, the other side is open.

Description	ID	Length
FMS-AK 5	0301821	5.0 m
FMS-AK 10	0301822	10.0 m
FMS-AK 20	0301823	20.0 m

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Force measuring jaws

The force measuring jaw is situated between the gripper base jaw and the top jaw. The gripping force is conducted through it. Active intermediate jaws measure these forces and transfer the measured value to the electronic processor. Active intermediate jaws are equipped with a 30 cm cable and a cable connector. Passive intermediate jaws act solely as a bridge for the forces.

Definitions

ⓘ The range of measurement is the range in which the overall system has an accuracy of < 3 %.
The overload range is the range in which the overall system has an accuracy of > 3 %. At the end of the overload range there is a risk of mechanical destruction of the intermediate jaw.

Description	ID	Start of range of measurement [N]	End of range of measurement [N]	End of overload range [N]	Weight [kg]	Min. ambient temperature [°C]	Max. ambient temperature [°C]
FMS-ZBA 50	**0301830**	0.0	145.0	290.0	0.03	-10.0	70.0
FMS-ZBP 50	**0301831**				0.02		
FMS-ZBA 64	**0301832**	0.0	260.0	520.0	0.04	-10.0	70.0
FMS-ZBP 64	**0301833**				0.025		
FMS-ZBA 80	**0301834**	0.0	430.0	860.0	0.056	-10.0	70.0
FMS-ZBP 80	**0301835**				0.035		
FMS-ZBA 100	**0301836**	0.0	685.0	1370.0	0.082	-10.0	70.0
FMS-ZBP 100	**0301837**				0.055		
FMS-ZBA 125	**0301838**	0.0	1120.0	2240.0	0.128	-10.0	70.0
FMS-ZBP 125	**0301839**				0.105		
FMS-ZBA 160	**0301840**	0.0	1600.0	3200.0	0.24	-10.0	70.0
FMS-ZBP 160	**0301841**				0.185		
FMS-ZBA 200	**0301842**	0.0	2325.0	4650.0	0.403	-10.0	70.0
FMS-ZBP 200	**0301843**				0.34		
FMS-ZBA 240	**0301844**	0.0	3700.0	7400.0	0.69	-10.0	70.0
FMS-ZBP 240	**0301845**				0.59		
FMS-ZBA 300	**0301846**	0.0	5150.0	10300.0	0.907	-10.0	70.0
FMS-ZBP 300	**0301847**				0.78		
FMS-ZBA 380	**0301848**	0.0	7100.0	14200.0	1.84	-10.0	70.0
FMS-ZBP 380	**0301849**				1.6		

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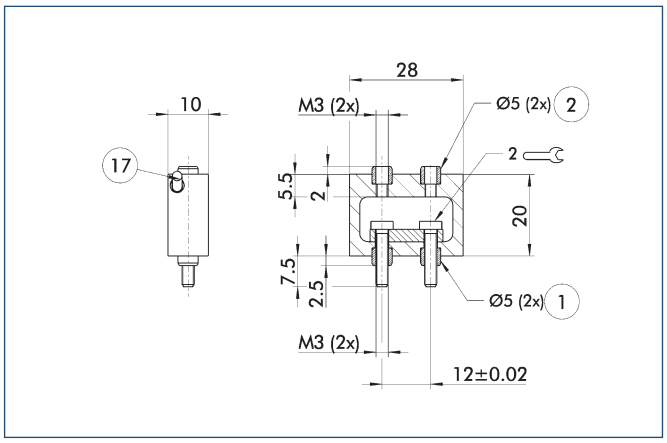
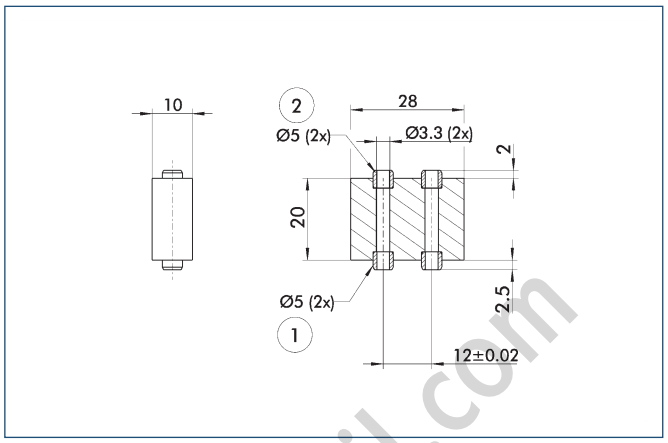
FMS-ZBA 50



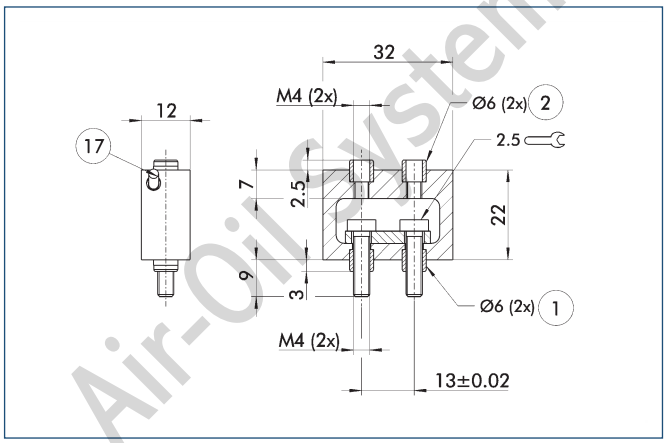
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 50



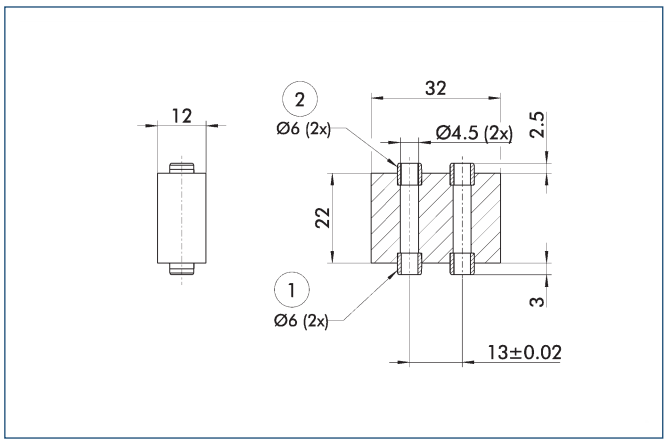
① Gripper connection
② Finger connection

FMS-ZBA 64



① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 64



① Gripper connection
② Finger connection

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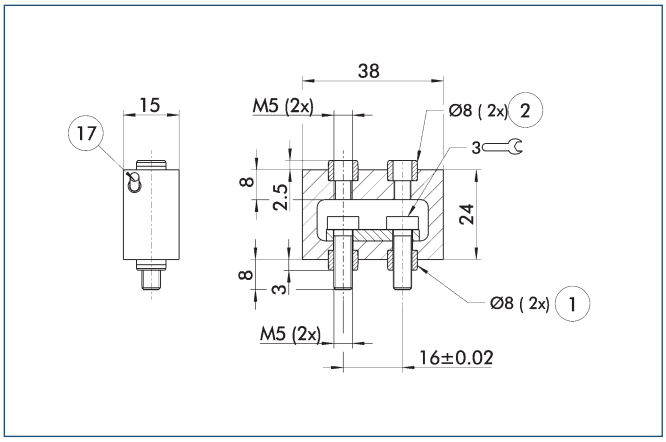
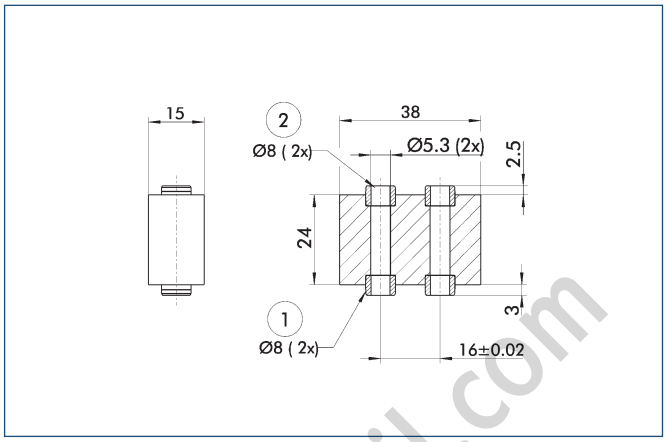
FMS-ZBA 80



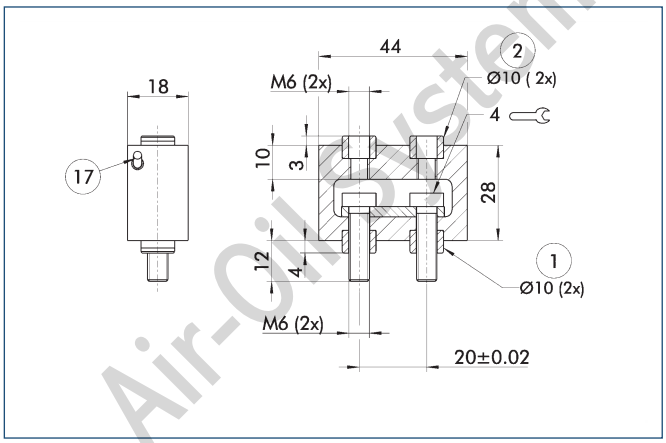
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 80



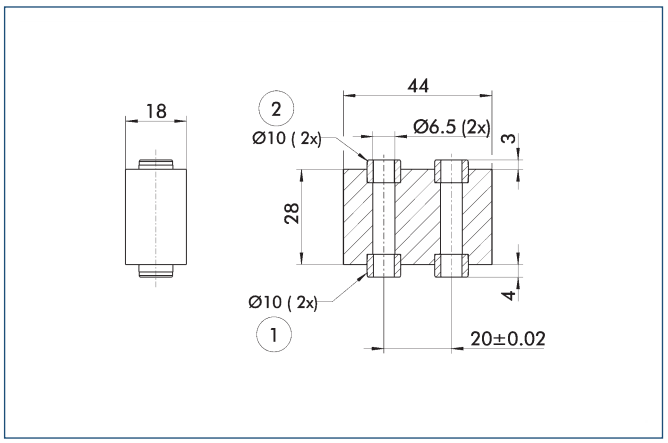
① Gripper connection
② Finger connection

FMS-ZBA 100



① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 100



① Gripper connection
② Finger connection

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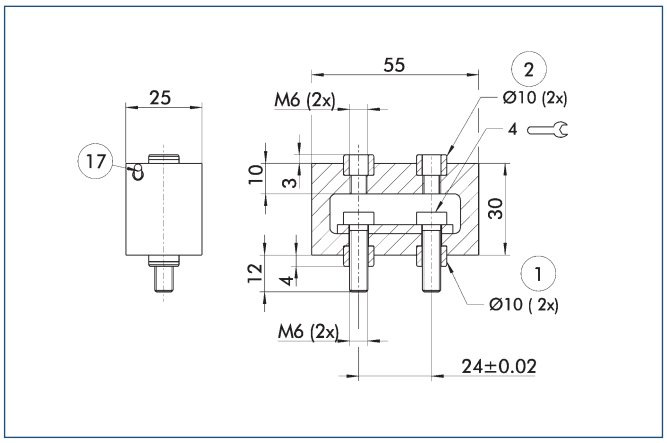
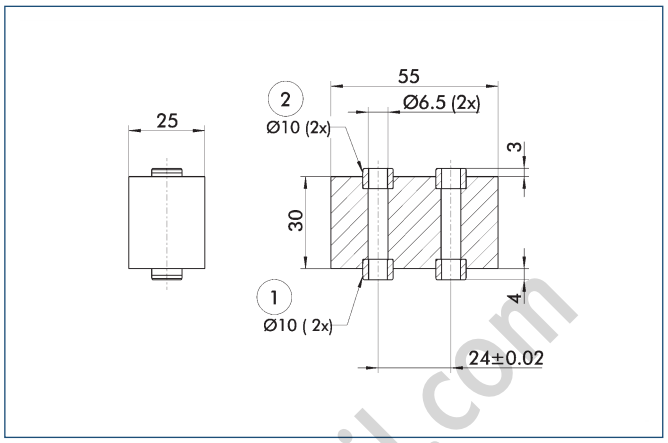
FMS-ZBA 125



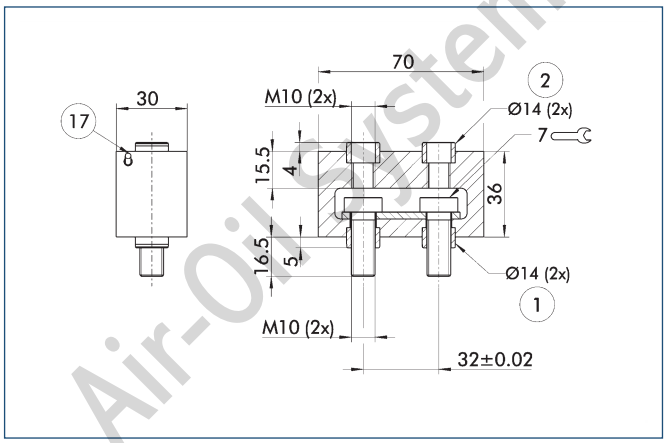
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 125



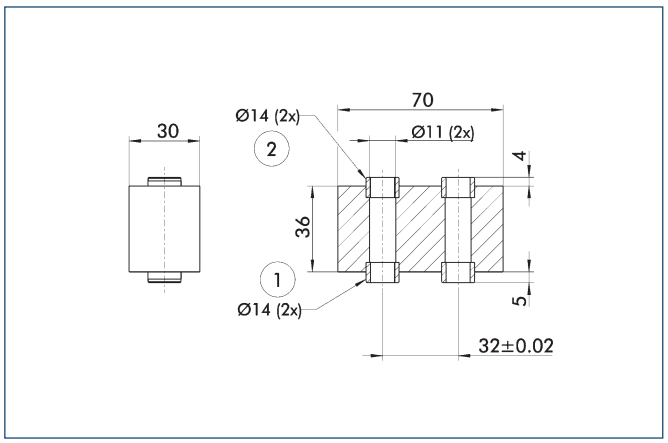
① Gripper connection
② Finger connection

FMS-ZBA 160



① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 160



① Gripper connection
② Finger connection

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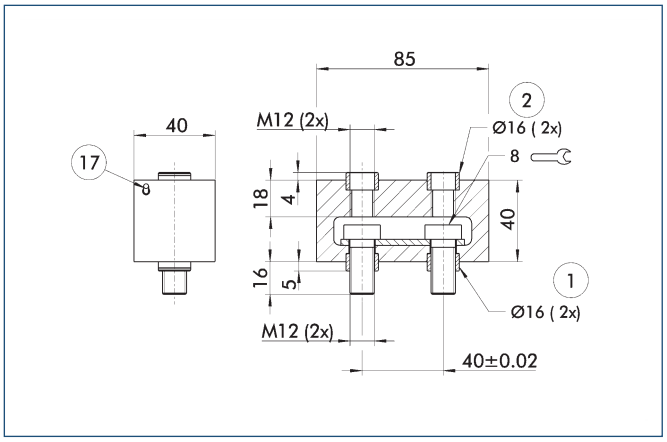
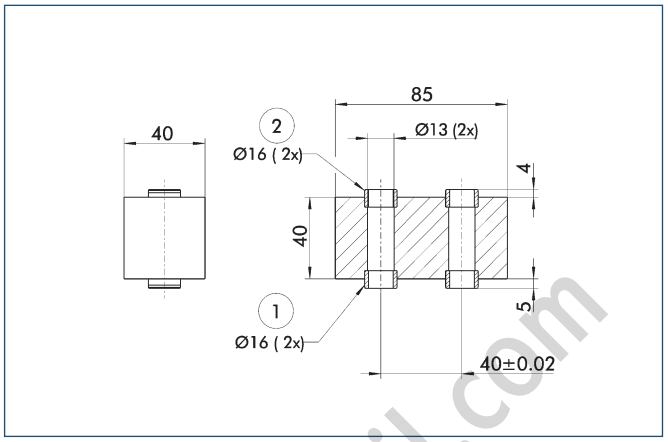
FMS-ZBA 200



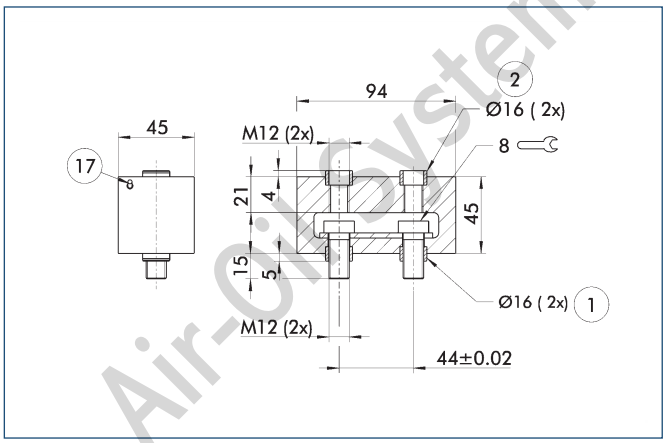
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 200



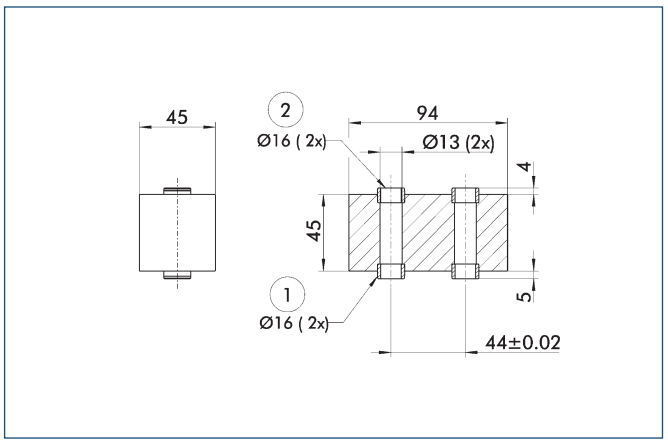
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBA 240



① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 240



① Gripper connection
② Finger connection

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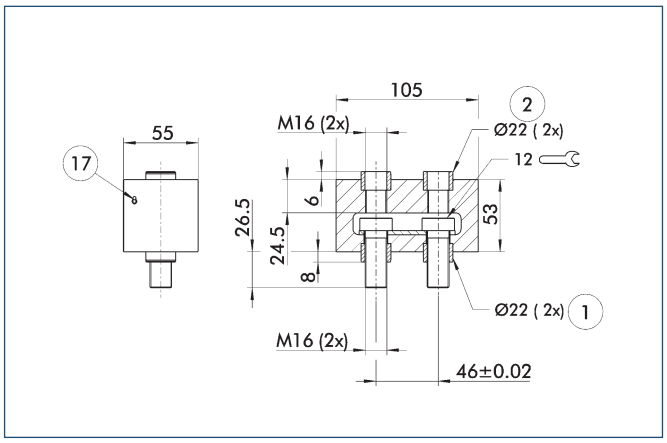
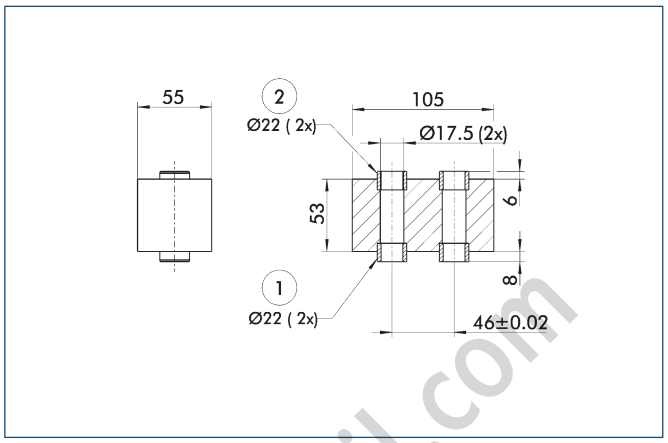
FMS-ZBA 300



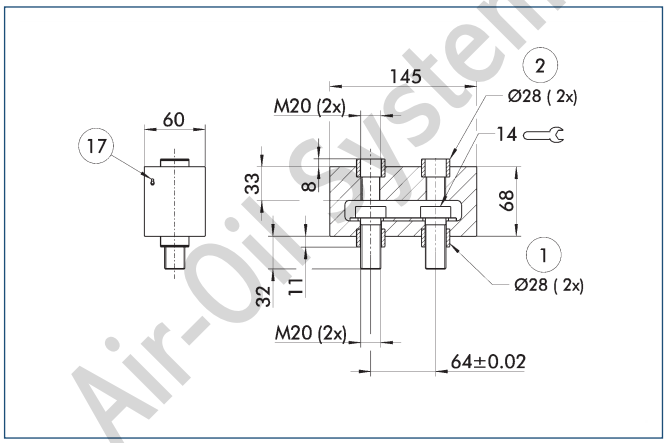
① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 300



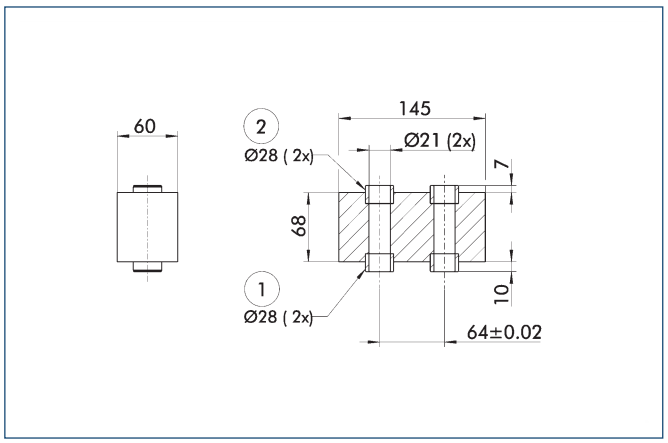
① Gripper connection
② Finger connection

FMS-ZBA 380



① Gripper connection
② Finger connection
⑰ Cable outlet

FMS-ZBP 380



① Gripper connection
② Finger connection

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Finger Blanks and Intermediate Jaws

Gripper Jaws

of aluminum or steel for customized subsequent machining

Function description

Finger and jaw blanks already feature the mechanical interface to the gripper.
The customer only needs to machine the blank to the specific workpiece geometry.

Your advantages and benefits

Matching finger blanks
for common gripper types

Easy mounting
thanks to standardized mounting pattern

High replacement accuracy
thanks to centering

Clamping contour
can be machined rapidly and easily

Fast delivery

Aluminum finger blanks
of high-strength aluminum alloy

Steel finger blanks
of hardenable steel

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Application example

Area of application

Optional

1 KTG 2-Finger Parallel Gripper

2 RB Finger Blanks for KTG

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General information

Scope of delivery

including screws

Notes

To suit your special requirements, we will be glad to supply low-cost special solutions, workpiece-specific gripper fingers, adapter plates and complete assemblies. Please ask for details.

ABR for MPG

Technical data

Description	ID	Items per ID	Weight [kg]	Material
ABR 20	0340210	2	0.006	Aluminum
ABR 25	0340211	2	0.008	Aluminum
ABR 32	0340212	2	0.016	Aluminum
ABR 40	0340213	2	0.031	Aluminum
ABR 50	0340214	2	0.068	Aluminum
ABR 64	0340215	2	0.12	Aluminum

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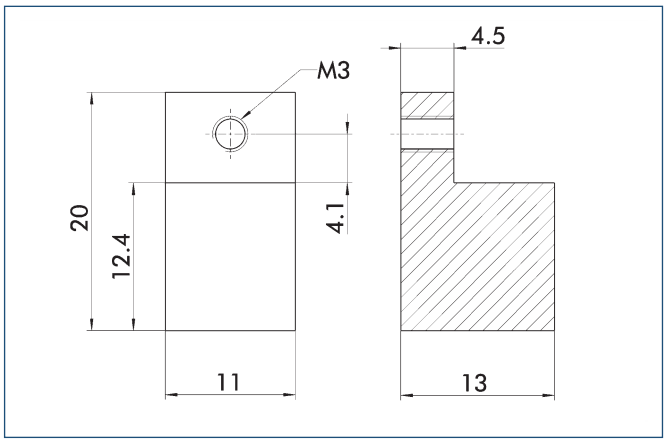
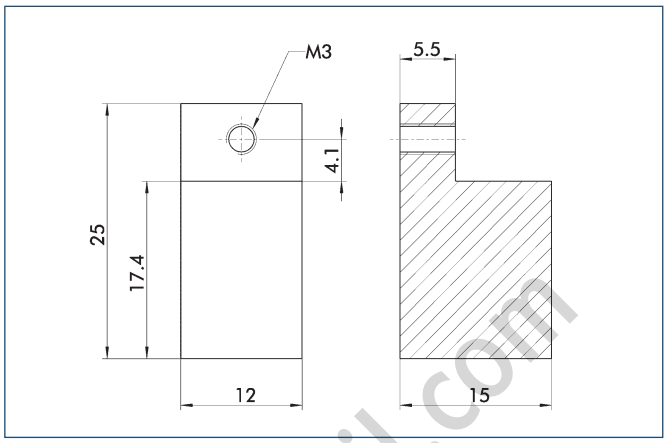
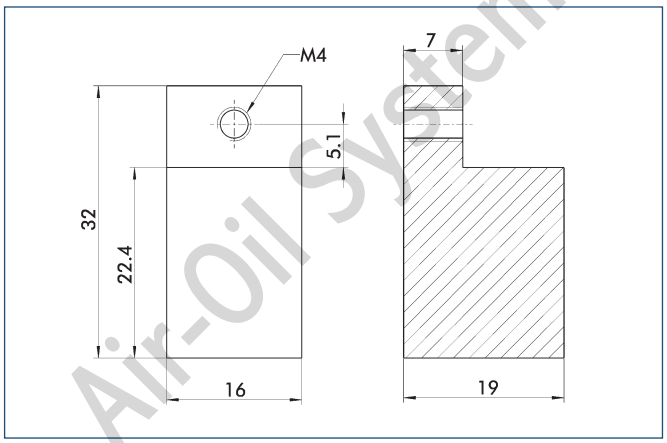
ABR 20



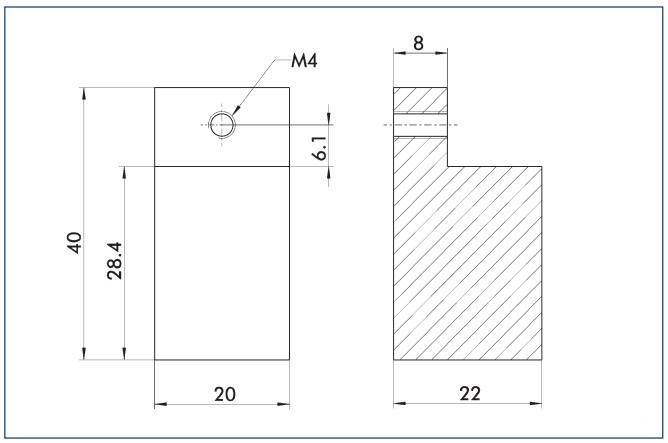
ABR 25



ABR 32



ABR 40



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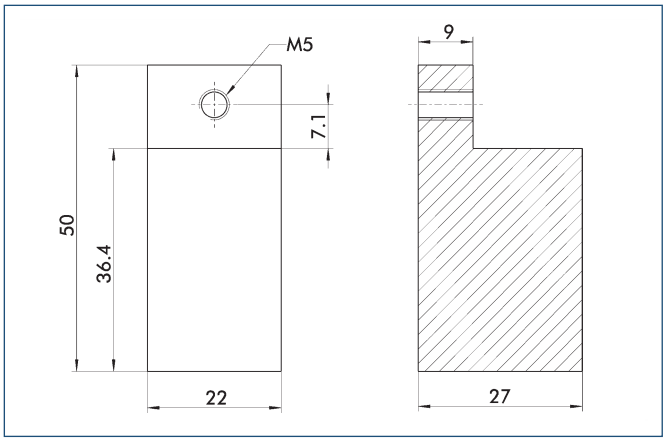
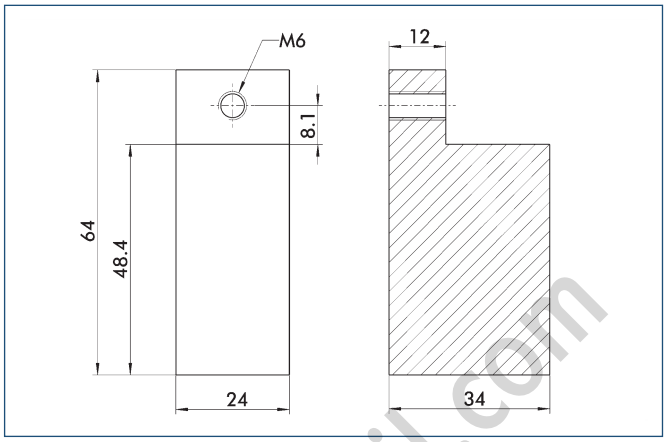
ABR for MPG

ABR 50



ABR 64



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ABR for MPZ

Technical data

Description	ID	Items per ID	Weight [kg]	Material
ABR 30	**0340519**	3	0.08	Aluminum
ABR 38	**0340529**	3	0.015	Aluminum
ABR 45	**0340539**	3	0.024	Aluminum

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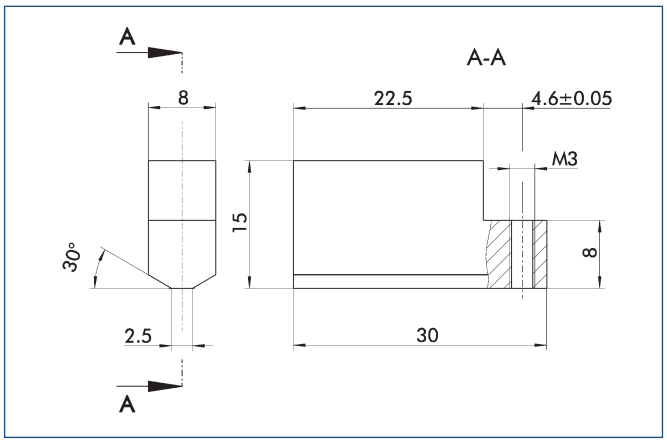
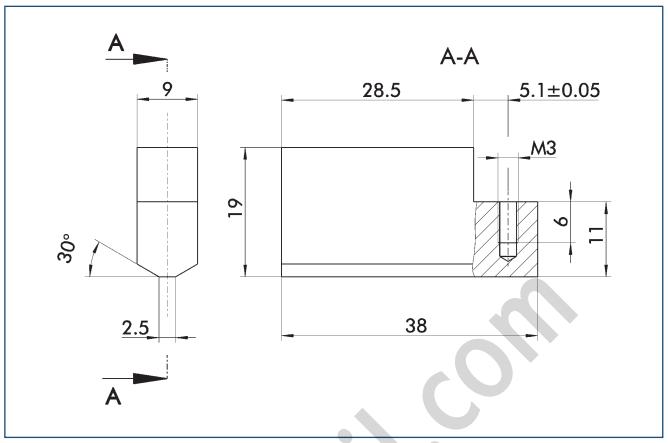
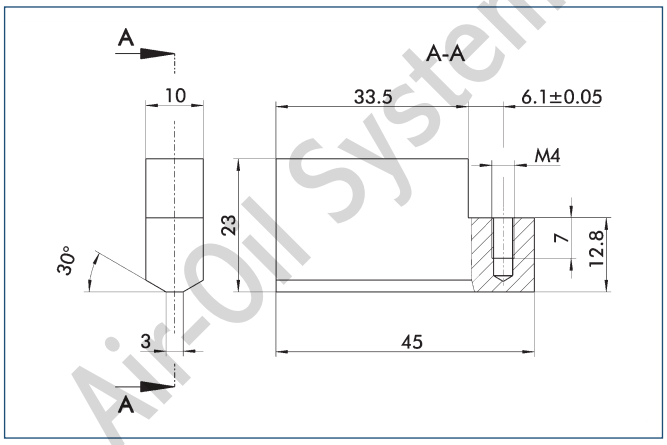
ABR 30



ABR 38



ABR 45



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ABR-plus/SBR-plus

Technical data

Description	ID	Items per ID	Weight [kg]	Material
ABR-plus 40	0300008	1	0.02	Aluminum
SBR-plus 40	0300018	1	0.055	16 MnCr 5
ABR-plus 50	0300009	1	0.045	Aluminum
SBR-plus 50	0300019	1	0.125	16 MnCr 5
ABR-plus 64	0300010	1	0.093	Aluminum
SBR-plus 64	0300020	1	0.26	16 MnCr 5
ABR-plus 80	0300011	1	0.162	Aluminum
SBR-plus 80	0300021	1	0.455	16 MnCr 5
ABR-plus 100	0300012	1	0.358	Aluminum
SBR-plus 100	0300022	1	1.004	16 MnCr 5
ABR-plus 125	0300013	1	0.638	Aluminum
SBR-plus 125	0300023	1	1.788	16 MnCr 5
ABR-plus 160	0300014	1	1.291	Aluminum
SBR-plus 160	0300024	1	3.45	16 MnCr 5
ABR-plus 200	0300015	1	2.191	Aluminum
SBR-plus 200	0300025	1	6.144	16 MnCr 5
SBR-plus 240	0300027	1	7.98	16 MnCr 5
ABR-plus 240	0300017	1	2.84	Aluminum
ABR-plus 300	0300016	1	3.236	Aluminum
SBR-plus 300	0300026	1	9.072	16 MnCr 5

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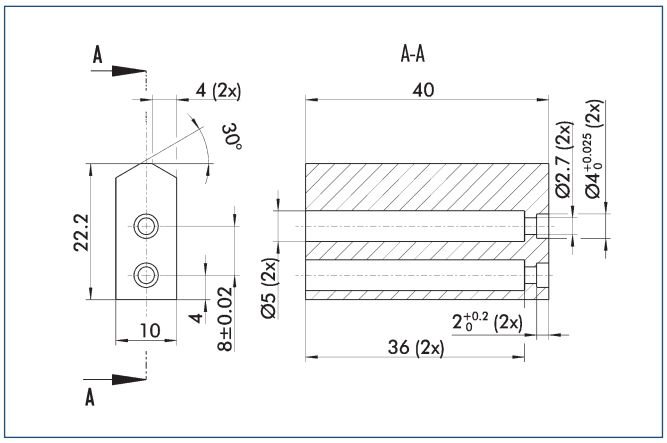
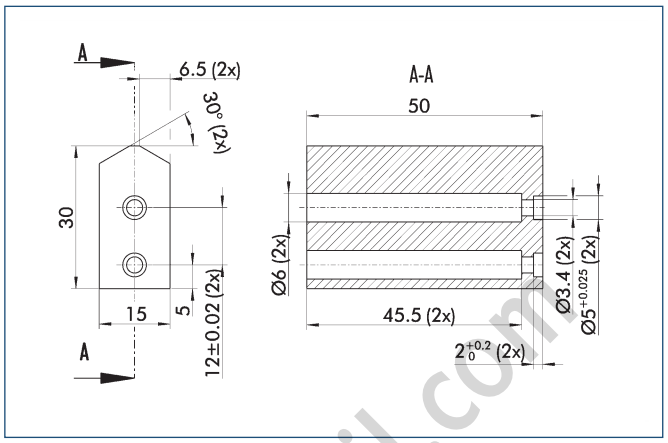
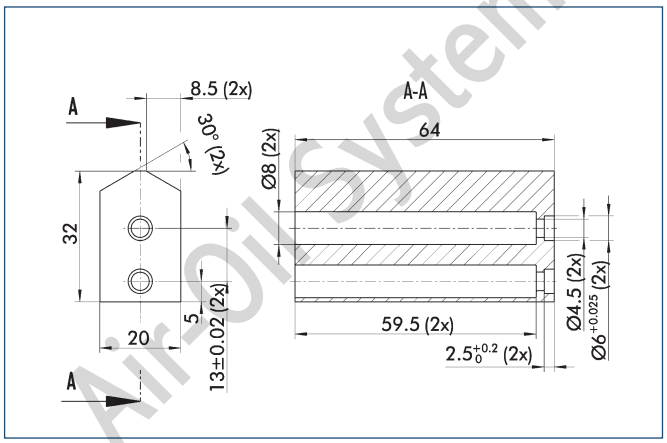
ABR-plus/SBR-plus 40



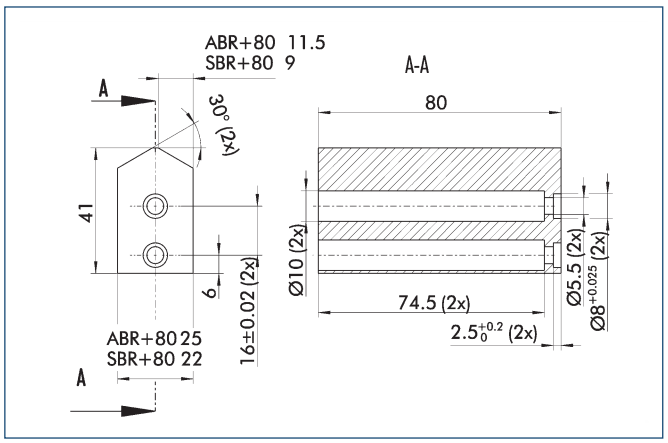
ABR-plus/SBR-plus 50



ABR-plus/SBR-plus 64



ABR-plus/SBR-plus 80



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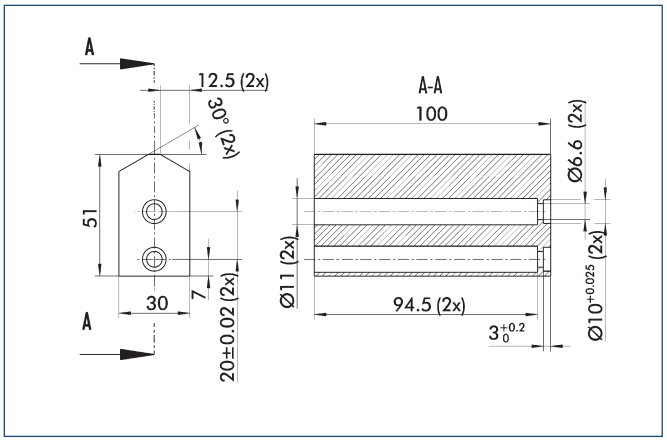
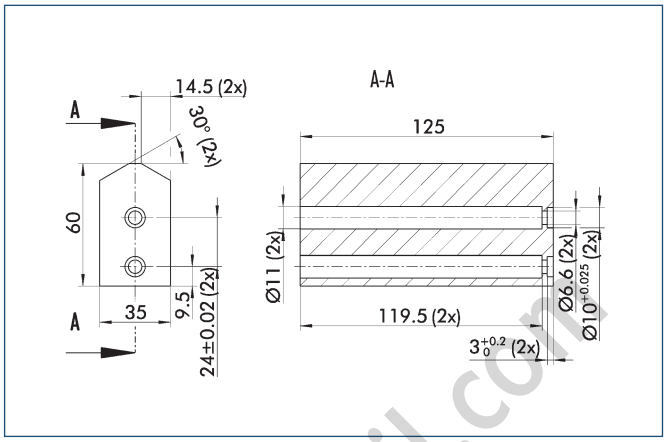
ABR-plus/SBR-plus

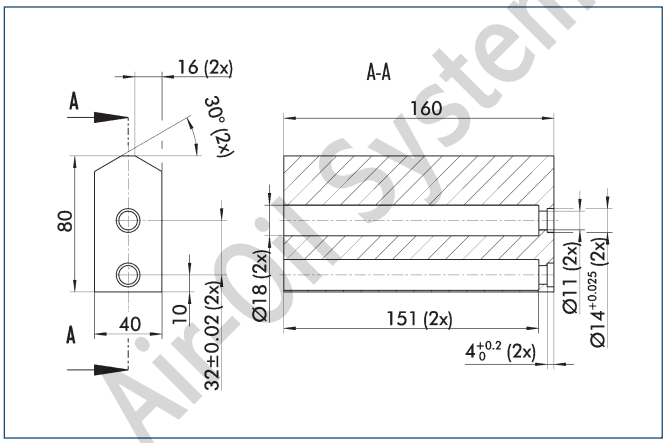
ABR-plus/SBR-plus 100



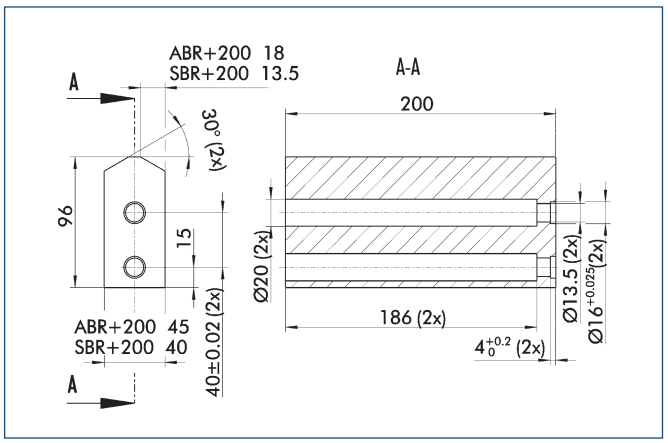
ABR-plus/SBR-plus 125



ABR-plus/SBR-plus 160



ABR-plus/SBR-plus 200



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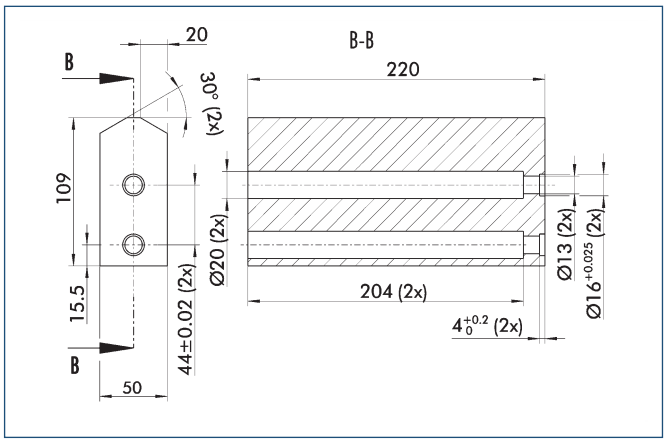
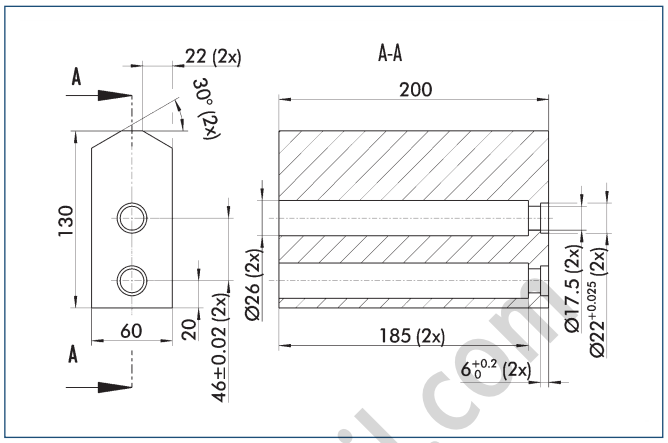
ABR-plus/SBR-plus 240



ABR-plus/SBR-plus 300



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ABR for PGN/PZN

Technical data

Description	ID	Items per ID	Weight [kg]	Material
ABR 50	0300714	1	0.045	Aluminum
SBR 50	0300715	1	0.15	16 MnCr 5
ABR 64	0300725	1	0.093	Aluminum
SBR 64	0300734	1	0.26	16 MnCr 5
ABR 80	0300726	1	0.162	Aluminum
SBR 80	0300735	1	0.455	16 MnCr 5
ABR 100	0300727	1	0.358	Aluminum
SBR 100	0300736	1	1.004	16 MnCr 5
ABR 125	0300728	1	0.638	Aluminum
SBR 125	0300737	1	1.788	16 MnCr 5
ABR 160	0300729	1	1.291	Aluminum
SBR 160	0300738	1	3.45	16 MnCr 5
ABR 200	0300751	1	2.191	Aluminum
SBR 200	0300739	1	6.144	16 MnCr 5
ABR 300	0300752	1	3.236	Aluminum
SBR 300	0300753	1	9.072	16 MnCr 5

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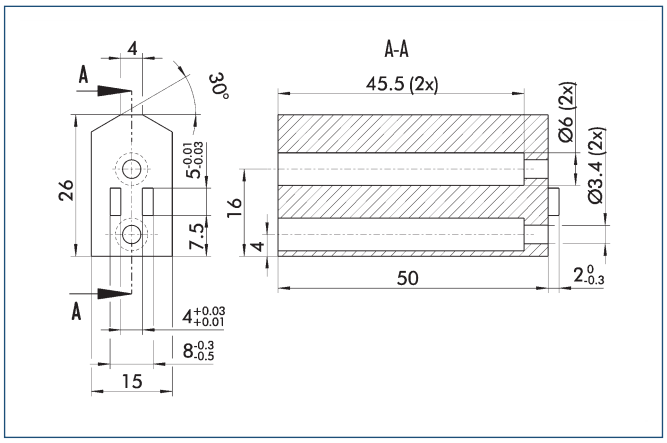
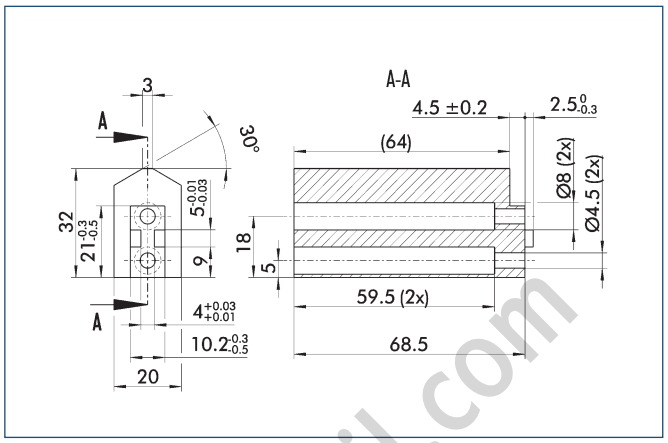
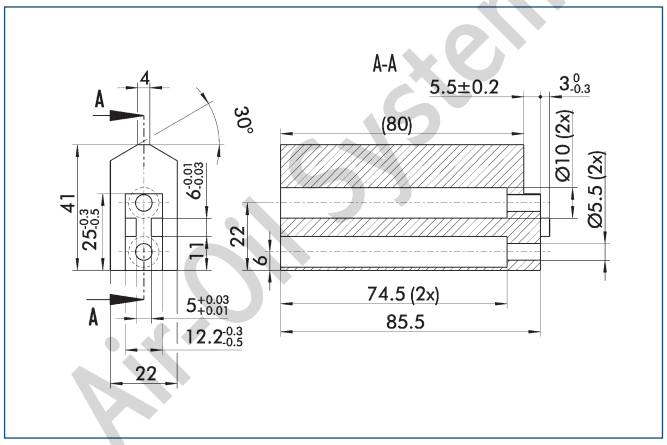
ABR 50/SBR 50



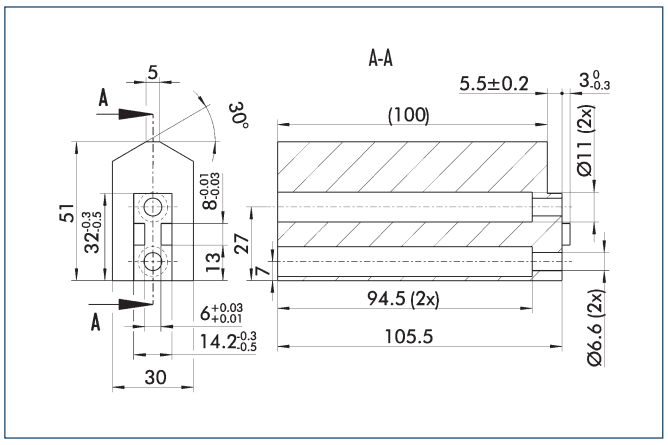
ABR 64/SBR 64



ABR 80/SBR 80



ABR 100/SBR 100



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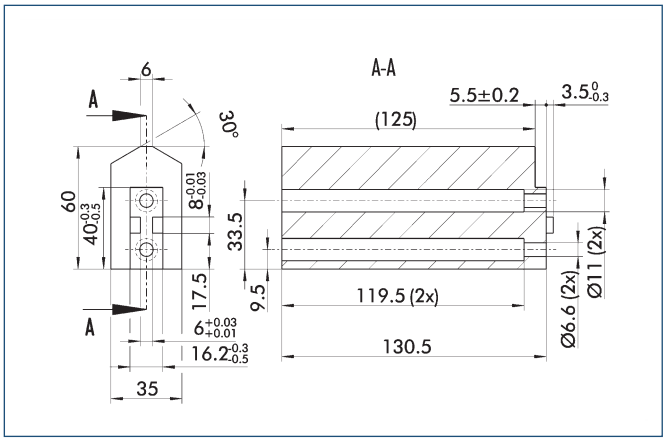
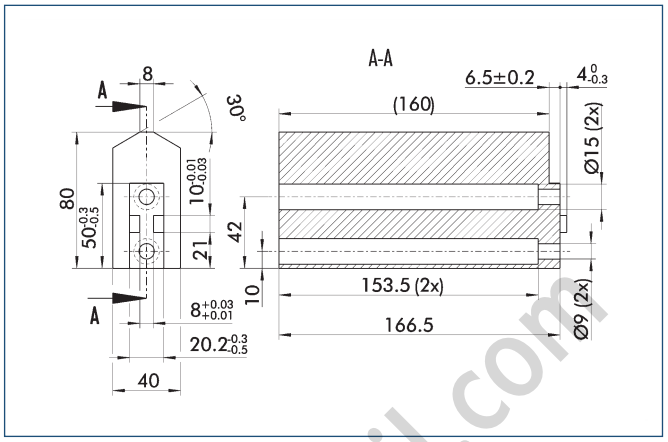
ABR for PGN/PZN

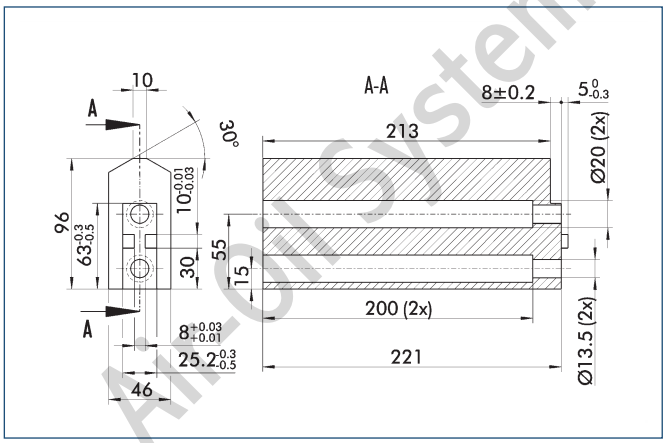
ABR 125/SBR 125



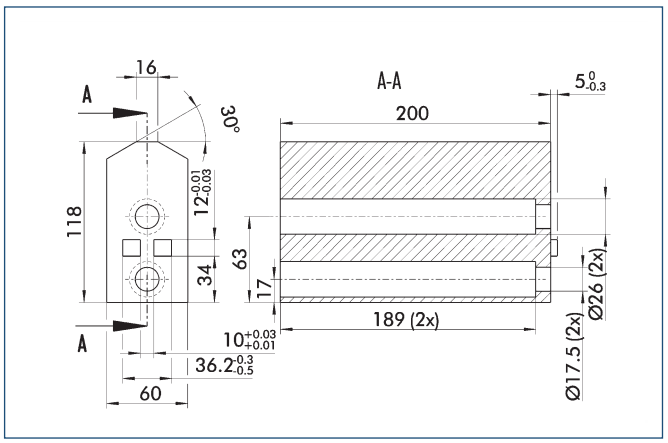
ABR 160/SBR 160



ABR 200/SBR 200



ABR 300/SBR 300



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RB for KTG

Technical data

Description	ID	Items per ID no.	Weight [kg]	Material
RB 50	0300280	2	0.065	Aluminum

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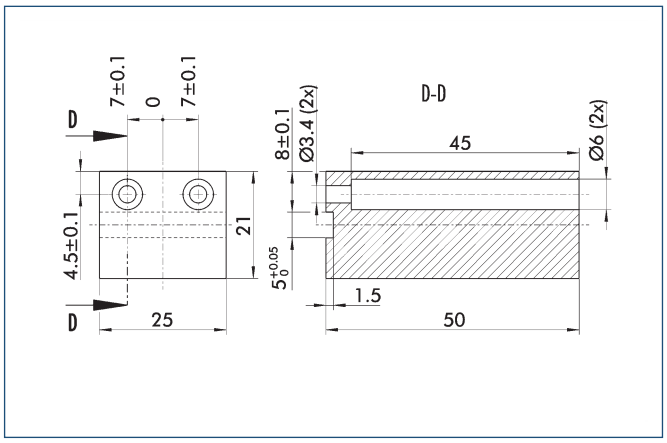
RB 50



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RB for KGG

Technical data

Description	ID	Items per ID	Weight [kg]	Material
RB 80	0300284	2	0.141	Aluminum
RB 80	0303089	2	0.141	Aluminum
RB 100	0303090	2	0.32	Aluminum
RB 140	0303091	2	0.467	Aluminum
RB 220	0300286	2	1.354	Aluminum
RB 140	0300285	2	0.467	Aluminum
RB 280	0300287	2	3.102	Aluminum

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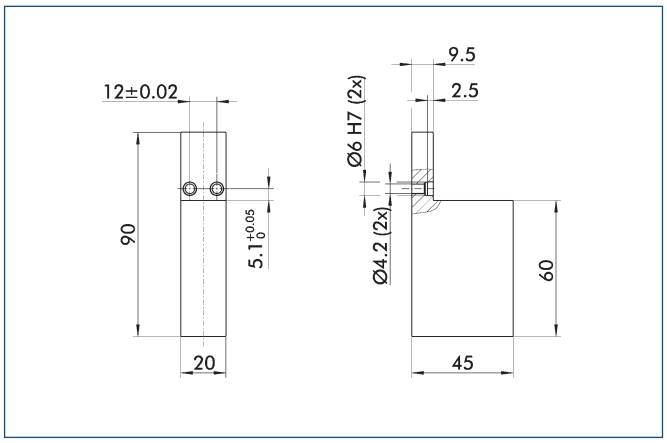
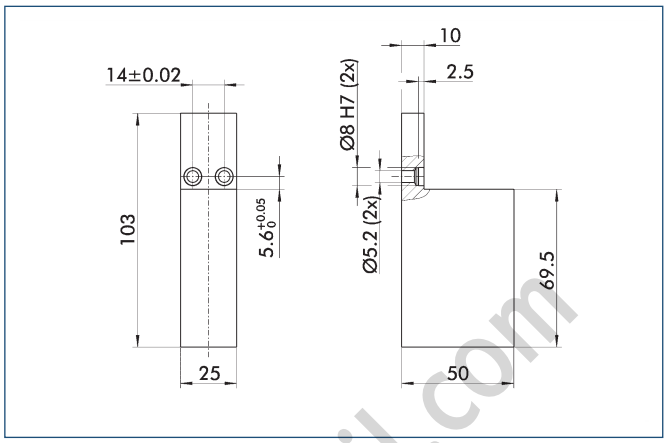
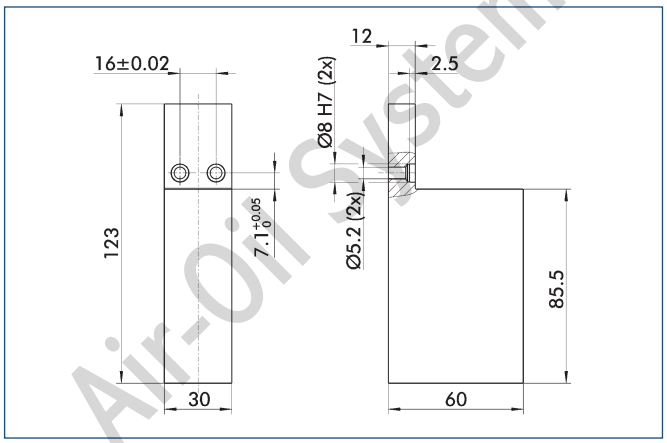
RB 80



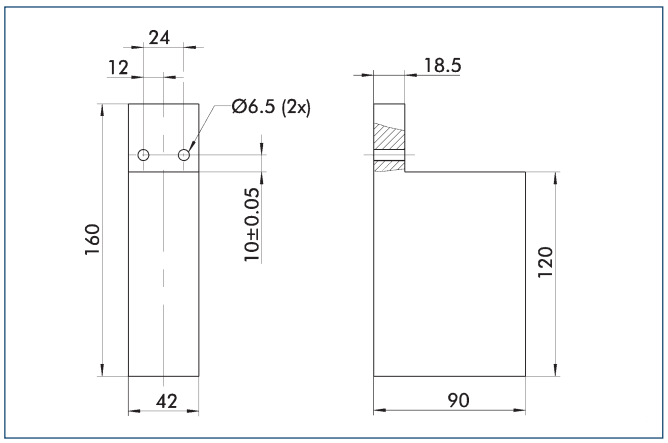
RB 100



RB 140



RB 220



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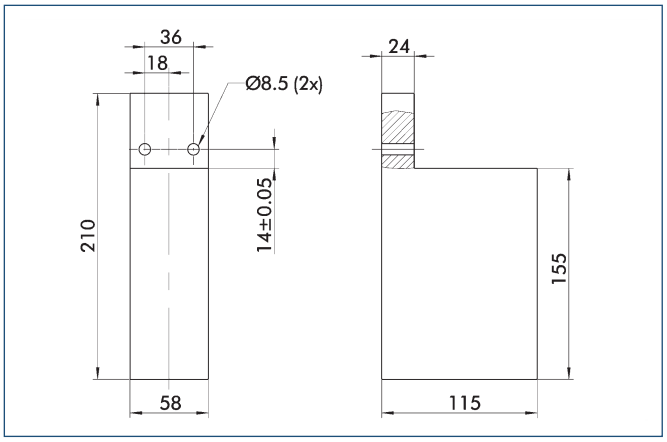
RB for KGG

RB 280



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RB for DKG-RR

Technical data

Description	ID	Items per ID	Weight [kg]	Material
RB 44	0300281	2	0.038	Aluminum

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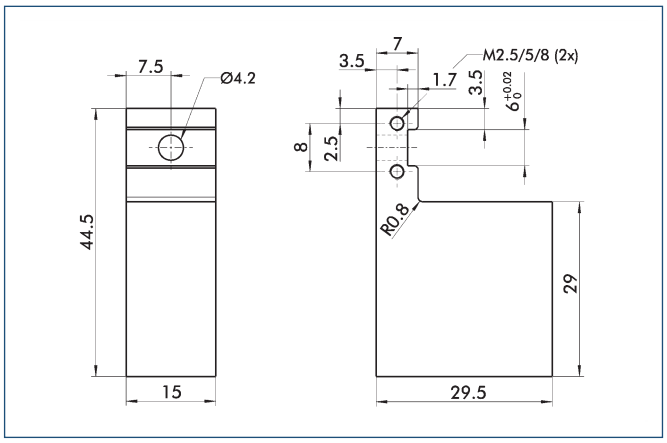
RB 44



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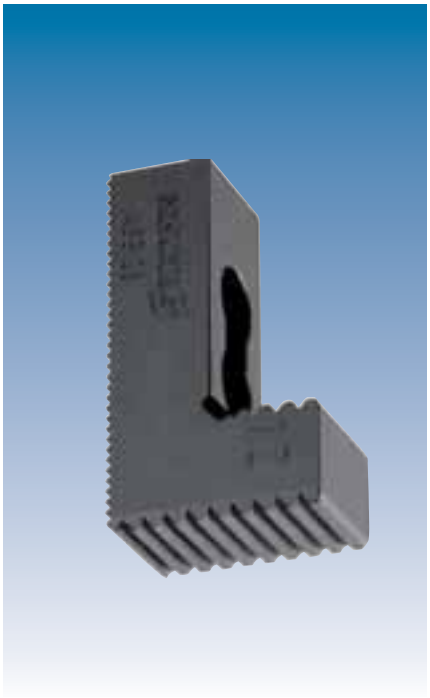
ASB/SBR for UFG



Technical data

Description	ID	Items per ID	Weight [kg]	Material
ASB 26	**0302703**	3	0.13	16 MnCr 5
ASB 32	**0302704**	3	0.34	16 MnCr 5
SBR 26	**0302707**	3	0.29	16 MnCr 5
SBR 32	**0302708**	3	0.6	16 MnCr 5

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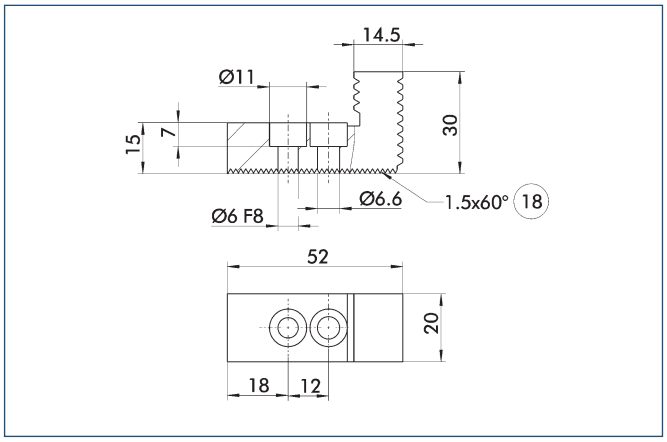
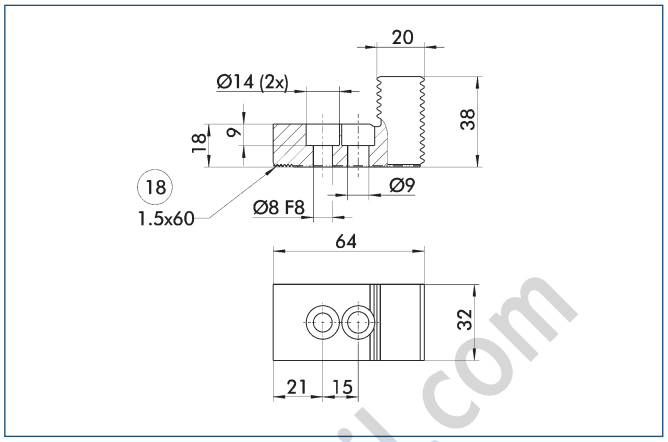
ASB 26



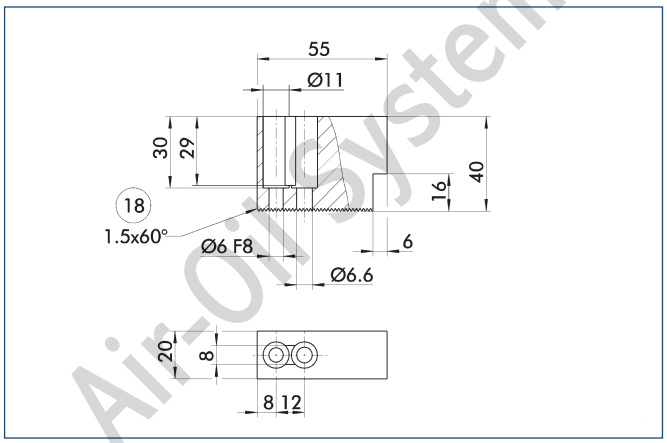
(18) Fine serration

ASB 32



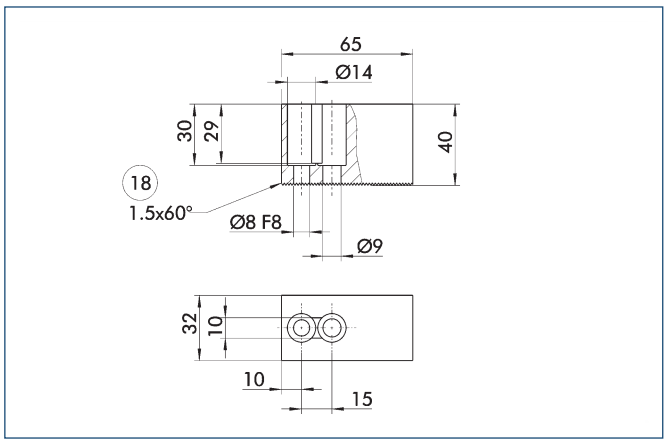
(18) Fine serration

SBR 26



(18) Fine serration

SBR 32



(18) Fine serration

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ZBH for PFH

Technical data

Description	ID	Items per ID	Weight [kg]	Material
ZBH 30	0300220	2	0.66	16 MnCr 5
ZBH 40	0300221	2	0.89	16 MnCr 5
ZBH 50	0300222	2	1.64	16 MnCr 5

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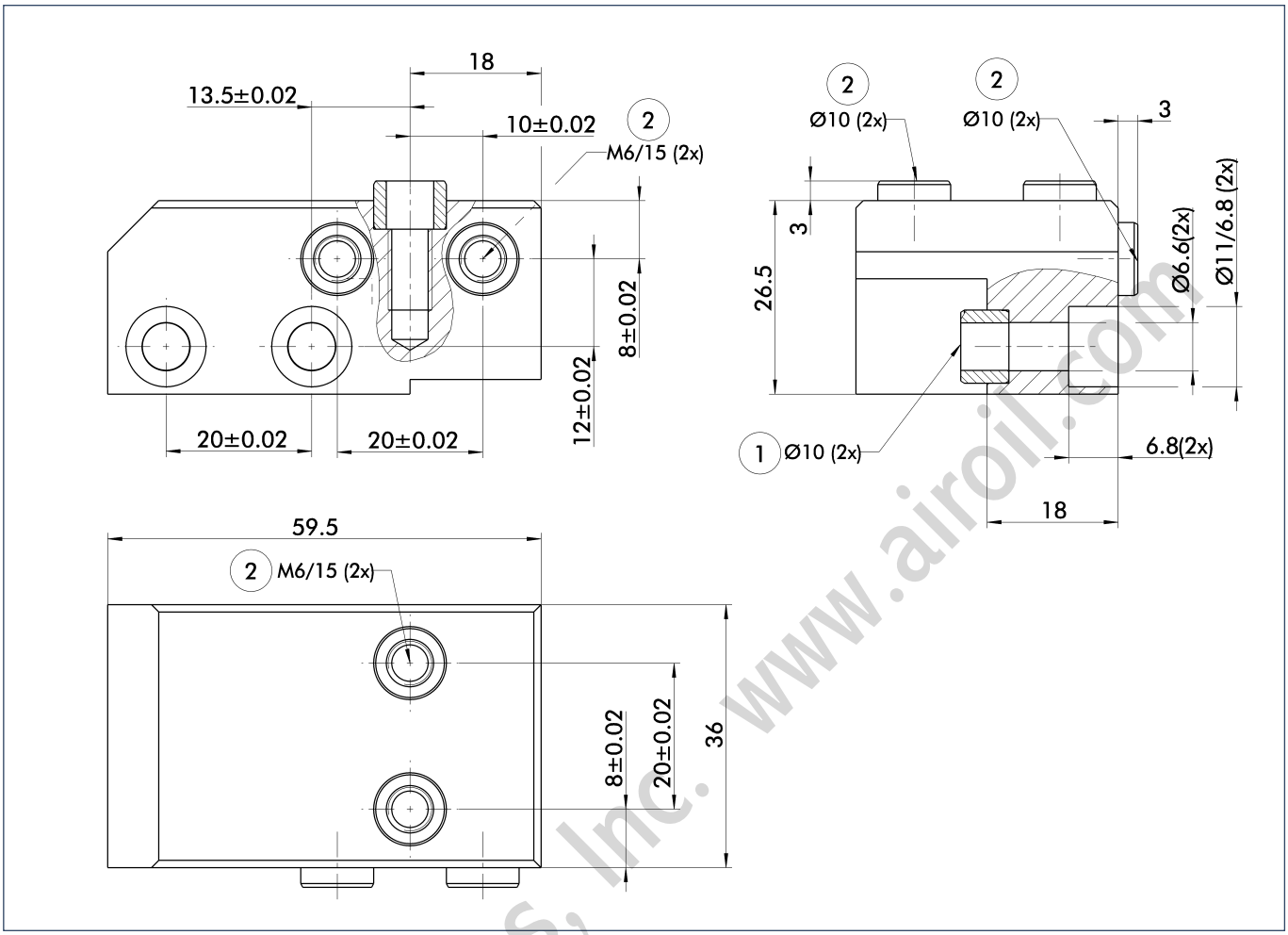
ZBH 30 for PFH 30



① Gripper connection
② Finger connection

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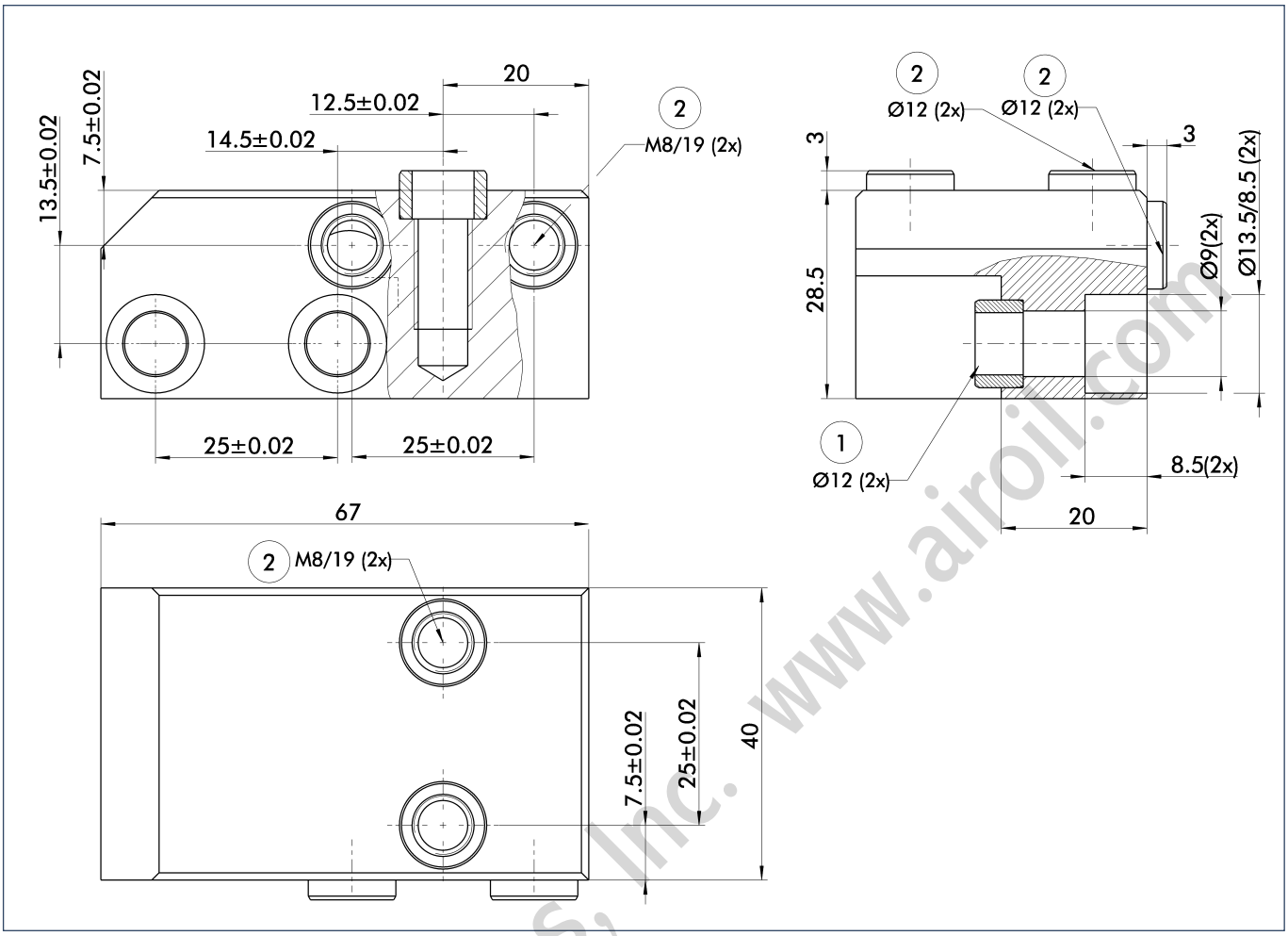
ZBH 40 for PFH 40



① Gripper connection
② Finger connection

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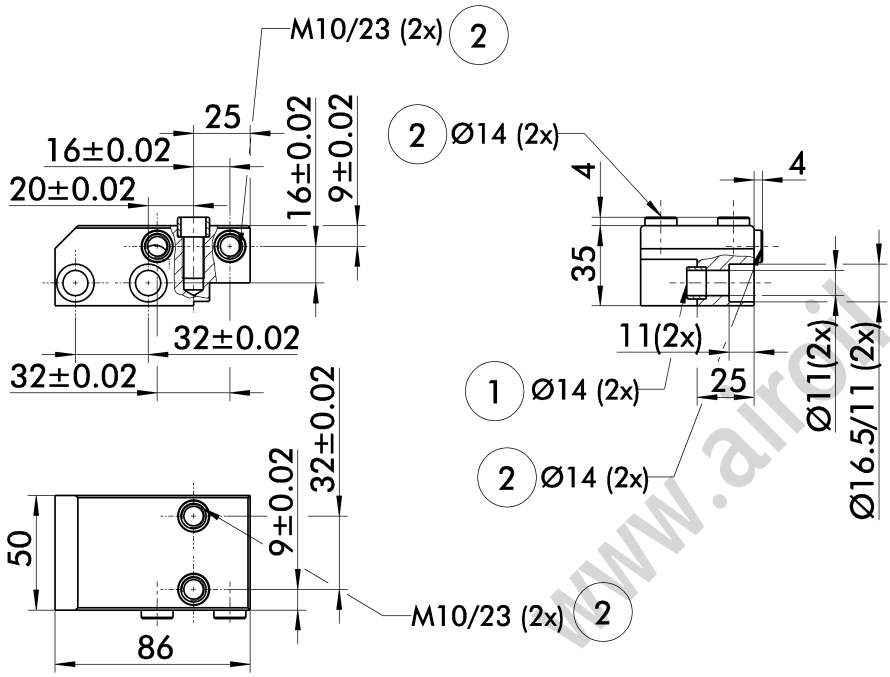
ZBH 50 for PFH 50



① Gripper connection
② Finger connection

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QUENTES

Product advantages

High friction coefficient of approx. 0.3 – 0.4
thanks to the use of glass-fiber-reinforced plastic

Gentle clamping
of the most delicate surfaces, no clamping marks, excellent for ground or surface-treated parts

Low-cost system
through replaceable clamping inserts

High stability
through the aluminum support structure of the supporting jaw

Light, stable design
for high speeds

All-round workpiece locating surface
for low-deformation clamping of machined parts

Technical data

Description		Quentes 5	Quentes 10
	ID	0300760	0300761
Weight	[kg]	0.13	0.28

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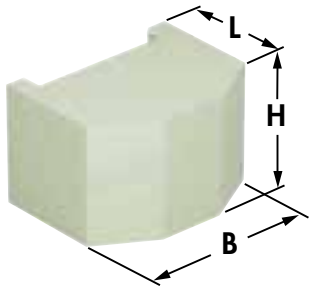
Main views



		Quentes 5	Quentes 10
B	[mm]	37	50
H	[mm]	25	32
L	[mm]	38	38

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Product advantages

Increased friction factor
so that a lower gripping force is required

Different sizes available

Rapid replacement possible

High load bearing capacity

Technical data

Description		HM 6	HM 8	HM 10	HM 11	HM 12	HM 13	HM 14	HM 15
	ID	0300780	0300781	0300782	0300783	0300784	0300785	0300786	0300787
Max. load strength	[N]	4500	6000	8000	11000	11000	20000	30000	20000
Keyed surface		No	No	Yes	Yes	No	Yes	Yes	Yes

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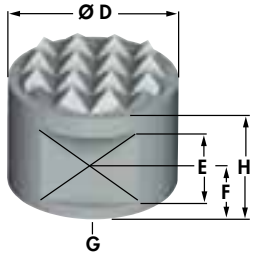
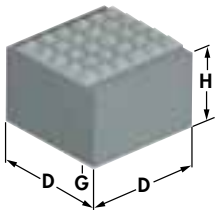
HM 6 – HM 14 clamping insert



	HM 6	HM 8	HM 10	HM 11	HM 12	HM 13	HM 14
$H_{-0.13}$	10	10	10	9.5	12.7	9.5	9.5
$D_{-0.13}$	Ø 6	Ø 8	Ø 10	Ø 12.7	Ø 12.7	Ø 15.8	Ø 19
F	–	4.5	4.5	4.5	4.5	4.5	4.5
E	–	5	5	5	5	5	5
Thread G	M3	M4	M5	M5	M6	M6	M6

HM 15 clamping insert



	HM 15
$H_{-0.13}$	9.5
$D_{-0.13}$	Ø 12.7 $^{+0.08}_{-0.13}$
F	–
E	–
Thread G	M6

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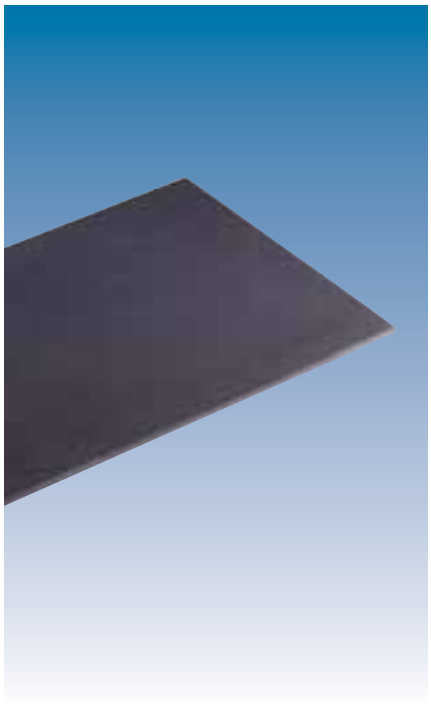

Product advantages

- Pliable surface
- Resistant to harsh ambient conditions
- Easy installation and replacement
- Can be adapted to customer-specific applications
- Ribbed surface for picking up workpieces with delicate surfaces

Technical data

Description		HKI 1E	HKI 1A	HKI 1S
	ID	0324160	0324161	0324162
		elastomer pad only	with aluminum base plate	with stainless steel base plate
Weight	[g/cm³]	0.3	1.0	3.6
Operating temperature range	[°C]	-30 to +100	-30 to +100	-30 to +100
Coefficient of friction against steel, dry		~ 0.5	~ 0.5	~ 0.5
Elastomer, NBR (Perbunan)		60 ± 5 Shore A	60 ± 5 Shore A	60 ± 5 Shore A

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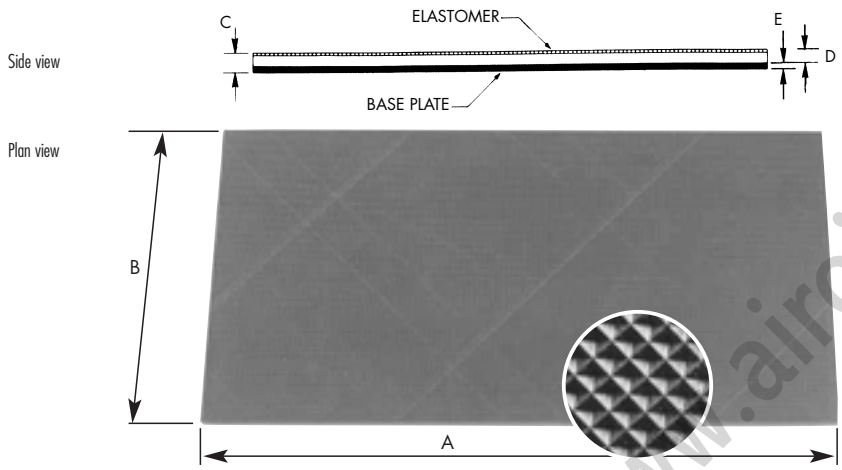
Main views

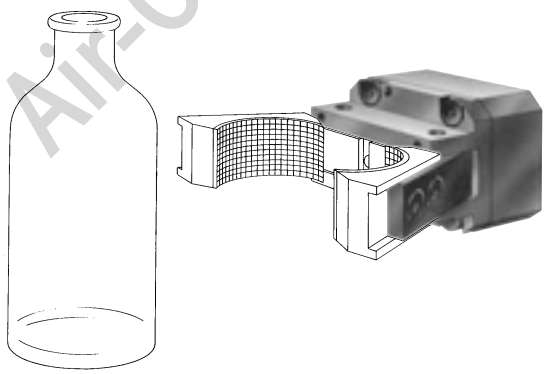


Gripper pads, type HKI 1

Gripper pads of durable, non-slip elastomer material for gripper jaws. Indispensable for applications that work best with a higher friction factor.
The gripper pads can be employed in a wide temperature range and are resistant to oil and other aggressive elements.
Gripper pads are available either with or without metal base plates.

		HKI 1 E	HKI 1A	HKI 1S
A	[mm]	300	300	300
B	[mm]	150	150	150
C	[mm]	–	6.3	13.5
D	[mm]	3.3	4.8	10.2
E	[mm]	–	1.5	3.3

HKI application example



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Guide Sleeves

Product advantages

- Simple, space-saving centering
- Easy assembly
- High replacement accuracy
- Suitable for numerous SCHUNK automation modules

Technical data

Diameter [mm]	ID	Ø d	H
2	9941547	1.3	1.95 – 0.05
2.5	9941628	1.7	1.95 – 0.05
3	9941629	2.1	1.95 – 0.05
3.5	9939947	2.1	2.95 – 0.05
4	9939376	2.6	3.95 – 0.05
5	9939377	3.1	4.35 – 0.05
6	9939384	4.1	5.35 – 0.05
8	9939378	5.1	5.35 – 0.05
10	9939379	6.2	6.65 – 0.05
12	9939380	8.2	6.65 – 0.05
14	9939381	10.2	8.60 – 0.10
16	9939382	12.2	8.60 – 0.10
22	9939383	16.2	13.60 – 0.10
28	9941220	21.0	17.60 – 0.10

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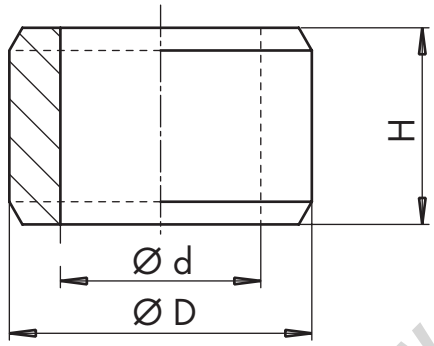
Main views



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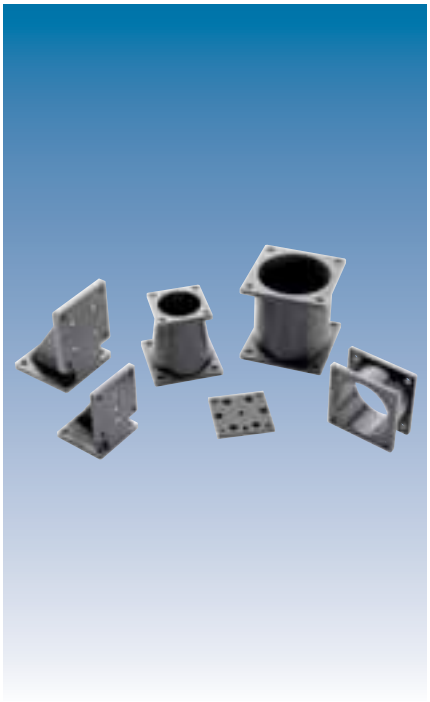
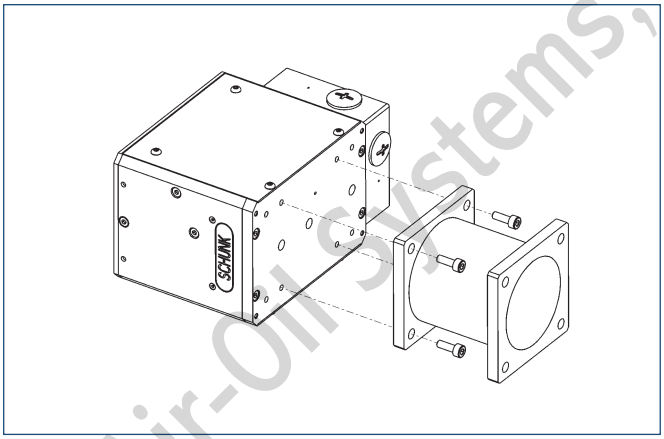


Product advantages

- Standard elements for connecting PowerCube modules with complete repeat accuracy
- Suitable for all grippers and rotary units of the PowerCube series (PG/PR/PW/PSM/PDU)
- Shaped designs: straight, conical and right-angle
- Special lengths on request

Straight PAM



Straight standard connecting element suitable for PG grippers, PR rotary unit, PW rotary tilting unit, PSM/PDU servo-motors and PLS linear modules of the PowerCube series. Special lengths on request

Description		PAM 100	PAM 101	PAM 102	PAM 103	PAM 104	PAM 105
	ID	0307800	0307801	0307802	0307803	0307804	0307805
Dimensions	[mm]	70x70/35/70x70	70x70/70/70x70	90x90/45/90x90	90x90/90/90x90	110x110/55/110x110	110x110/110/110x110
Suitable for		PG 70/PR 70/ PW 70/PSM 70/ PDU 70/PLS 70	PG 70/PR 70/ PW 70/PSM 70/ PDU 70/PLS 70	PR 90/PW 90/ PSM 90/PDU 90/ PLS 90	PR 90/PW 90/ PSM 90/PDU 90/ PLS 90	PR 110/PW 110/ PSM 110/PDU 110/ PLS 110	PR 110/PW 110/ PSM 110/PDU 110/ PLS 110

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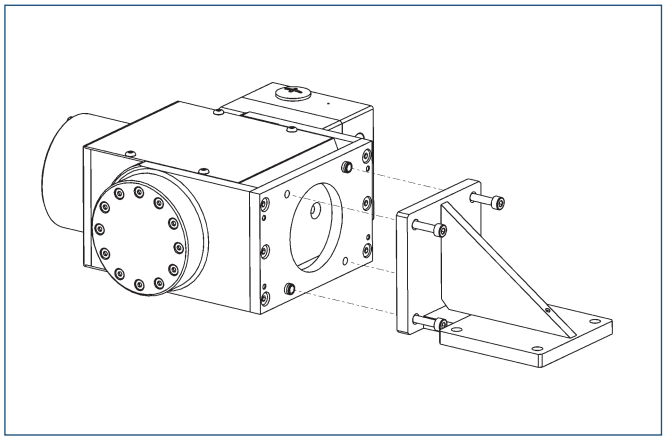
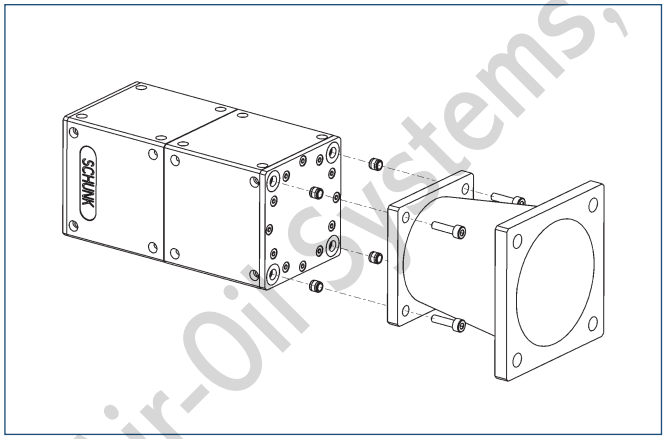
Right-angle PAM



Right-angle standard connecting element suitable for PG grippers, PR rotary unit, PW rotary tilting unit, PSM/PDU servo-motors and PLS linear modules of the PowerCube series. Special lengths on request

Description		PAM 120	PAM 121	PAM 122
	ID	0307820	0307821	0307822
Dimensions	[mm]	90°/ 70.5x98	90°/ 90.5x122	90°/ 110.5x146
Suitable for		PG 70/PR 70/PW 70/ PSM 70/PDU 70/PLS 70	PR 90/PW 90/PSM 90/ PDU 90/PLS 90	PR 110/PW 110/PSM 110/ PDU 110/PLS 110

Conical PAM



Conical standard connecting element for connecting PowerCube modules in various sizes, suitable for PG grippers, PR rotary unit, PW rotary tilting unit, PSM/PDU servo-motors and PLS linear modules. Special lengths on request

Description		PAM 110	PAM 111	PAM 112	PAM 113
	ID	0307810	0307811	0307812	0307813
Dimensions	[mm]	90x90/45/70x70	90x90/90/70x70	110x110/55/90x90	110x110/110/90x90
Suitable for		PR/PW/PSM/PDU/ sizes 70 and 90	PR/PW/PSM/PDU/ sizes 70 and 90	PR/PW/PSM/PDU/ sizes 90 and 110	PR/PW/PSM/PDU/ sizes 90 and 110

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Application example

1 SDV-P pressure maintenance valve

2 SWV pivot screw connection

3 PGN-plus 2-Finger Parallel Gripper with workpiece-specific gripper fingers

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Pressure maintenance valve and fitting

Your advantages and benefits

Suitable for all SCHUNK gripper, rotary and linear modules and robot accessories

Everything from a single source

The SDV-P pressure maintenance valve protects against a loss of pressure

Version as plug-in connection (SCHUNK fittings)

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Pressure maintenance valve

In the event of a loss of pressure, the pressure maintenance valve prevents the air from escaping out of the gripper. This prevents a loss in clamping force, and the workpieces remain securely clamped in the gripper jaws. Especially suitable for grippers that cannot be equipped with mechanical pressure maintenance.

Function

Two check valves connected in parallel, which automatically open the return channel and close the pressure line on a loss of pressure.

Technical data

Description		SDV-P 04	SDV-P 07
	ID	0403130	0403131
Nominal size	[mm]	4	7
Flow	[l/min]	200	300
Weight	[g]	100	180
Medium		filtered compressed air 10 µm lubricated or dry	filtered compressed air, 10 µm lubricated or dry
Pressure range	[bar]	0.5 - 10	0.5 - 10 bar
Temperature range	[°C]	-10 to +80	-10 to +80
Switching time	[ms]	approx. 10	approx. 10
Version		stainless steel	stainless steel
Max. drop in pressure within 24 h. (test volume 2 cm^3)	[bar]	0.5	0.5

ⓘ Max. flow per port at p = 6 bar

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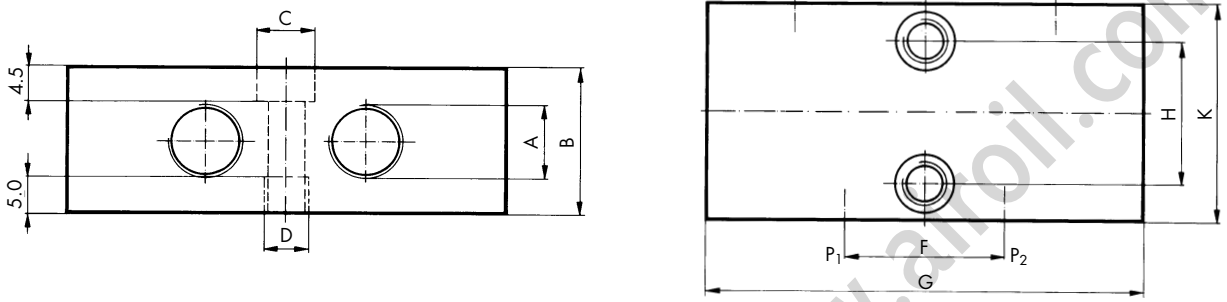
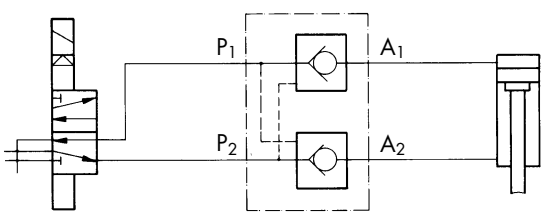
Main views



Variable	SDV-P 04	SDV-P 07
A	G 1/8"	G 1/4"
B	20	24
C	8	8
D	M 5	M 5
E	36	44.6
F	22	26
G	60	75
H	20	26
K	30	40

Circuit diagram



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WV elbow fitting

Version as push-in connection for simple, rapid connection to pneumatic energy supplies

Technical data

Description		WV-G 1-8-6	WV-G 1-8-8	WV-G 1-4-6
	ID	9937129	9936730	9937170
Hose	[mm]	6	8	6
Material of body			Ms 58 nickel-plated	
			release ring: POM plastic, gray	
Material of clamping collet			stainless steel	
			seal: O-ring, NBR	
Temperature range	[°C]	-10 to 60	-10 to 60	-10 to 60
Max. operating pressure	[bar]	20	20	20

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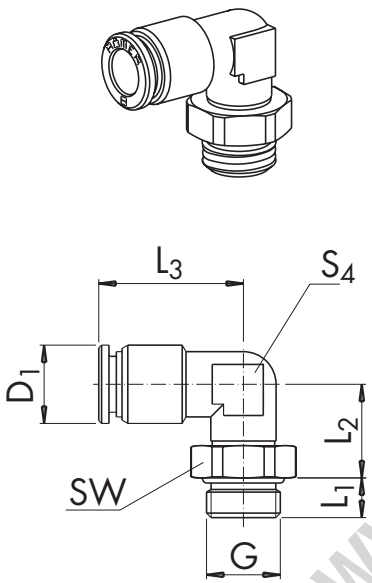
Main views of WV elbow fitting



Variable	WV-G 1-8-6	WV-G 1-8-8	WV-G 1-4-6
G	1/8"	1/8"	1/4"
L1	5	5	7
L2	13.5	16	15.5
L3	22	25.5	23.5
D1	12	14	12
SW	13	13	17
S4	10	12	10

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SWV banjo fitting

Version as push-in connection for simple, rapid connection to pneumatic energy supplies

Technical data

Description		SWV-M3-4	SWV-M5-6	SWV-G8-6	SWV-G4-6	SWV-G4-8
	ID	9210505	9936171	9937152	9937128	9936728
Hose	[mm]	4	6	6	6	8
Material of body				Ms 58 nickel-plated		
				release ring: POM plastic, gray		
Material of clamping collet				stainless steel		
				seal: O-ring, NBR		
Temperature range	[°C]	-10 to 60	-10 to 60	-10 to 60	-10 to 60	-10 to 60
Max. operating pressure	[bar]	20	20	20	20	20

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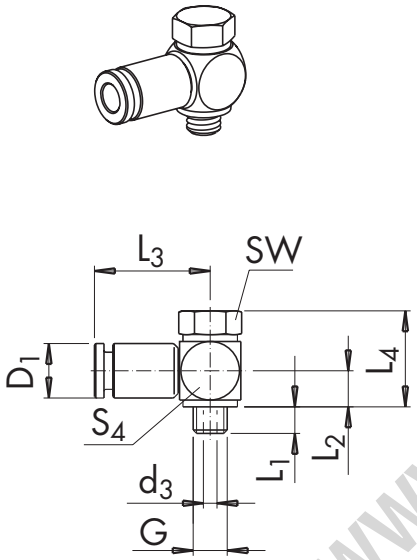
Main views of SWV banjo fitting



Variable	SWV-M3-4	SWV-M5-6	SWV-G8-6	SWV-G4-6	SWV-G4-8
G	M3	M5	G1/8"	G1/4"	G1/4"
d3	1.1	2	5	7	7
L1	2	4	6.5	8	8
L2	2.5	6.2	8.25	8.4	15.3
L3	7.3	18.5	22.5	24.5	25
L4	7.3	15.8	20.5	21.6	21.6
D1	3.4	10	12	12	13.5
SW	5	8	14	17	17
S4	5	10	15	19	19

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DSV banjo fitting with one-way flow control valve

Version as push-in connection for simple, rapid connection
to pneumatic energy supplies

Technical data

Description		DSV-M3-4	DSV-M5-6	DSV-G8-6	DSV-G4-6	DSV-G8-8
	ID	9720005	9936160	9936159	9936161	9936162
Hose	[mm]	3	6	6	6	8
Material of body				Ms 58 nickel-plated		
				release ring: POM plastic, gray		
Material of clamping collet				stainless steel		
				seal: O-ring, NBR		
Temperature range	[°C]	-10 to 60	-10 to 60	-10 to 60	-10 to 60	-10 to 60
Max. operating pressure	[bar]	20	20	20	20	20

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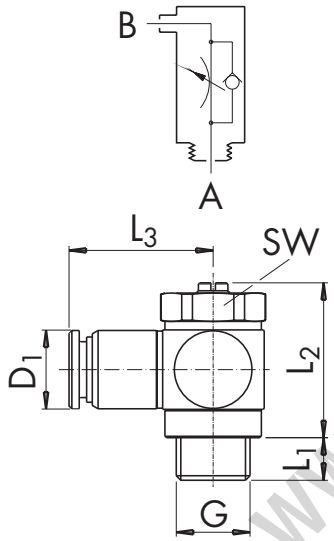
Main views of DSV banjo fitting with one-way flow control valve



Variable	DSV-M3-4	DSV-M5-6	DSV-G8-6	DSV-G4-6	DSV-G8-8
G	M3	M5	G1/8"	G1/4"	G1/8"
L1	2.5	4	5	6.5	5
L2 max.	29	21.5	30	32	30
L3	11	21	22.5	24.5	23
D1	4.8	10.4	12	12	14
SW	knurled	8	14	17	14

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Notes

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Notes

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Subsidiaries

GERMANY
HEAD OFFICE
SCHUNK GmbH & Co. KG
Spann- und Greiftechnik
Bahnhofstr. 106-134
74348 Lauffen/Neckar
Tel. +49-7133-103-0
Fax +49-7133-103-399
info@de.schunk.com
www.schunk.com

CHINA
SCHUNK Precision Machinery
(Hangzhou) Co., Ltd.
6, 24th Street, HEDA
Hangzhou 310018
Tel. +86-571-8672-1000
Fax +86-571-8672-8800
info@cn.schunk.com
www.cn.schunk.com

SCHUNK GmbH & Co. KG
Shanghai
Representative Office
777 Zhao Jia Bang Road
Pine City Hotel, Room 923,
Xuhui District,
Shanghai 200032
Tel. +86-21-64433177
Fax +86-21-64431922
info@cn.schunk.com
www.cn.schunk.com

GREAT BRITAIN
SCHUNK Intec Ltd.
Cromwell Business Centre
10 Howard Way,
Interchange Park
Newport Pagnell MK16 9QS
Tel. +44-1908-611127
Fax +44-1908-615525
info@gb.schunk.com
www.gb.schunk.com

NETHERLANDS
SCHUNK Intec B.V.
Bieslook 7a
6942 SG Didam
Tel. +31-316-373967
Fax +31-316-373316
info@nl.schunk.com
www.nl.schunk.com

SPAIN
SCHUNK Intec S.L.
Foneria, 27
08304 Mataró (Barcelona)
Tel. +34-937 556 020
Fax +34-937 908 692
info@es.schunk.com
www.es.schunk.com

HUNGARY
SCHUNK Intec Kft.
Széchenyi út. 70.
3530 Miskolc
Tel. +36-46-50900-7
Fax +36-46-50900-6
info@hu.schunk.com
www.hu.schunk.com

POLAND
SCHUNK Intec Sp. z o.o.
Stara Iwiczna,
ul. Słoneczna 116 A
05-500 Piaseczno
Tel. +48-22-7262500
Fax +48-22-7262525
info@pl.schunk.com
www.pl.schunk.com

SWEDEN
SCHUNK Intec AB
Morabergsvägen 28
152 42 Södertälje
Tel. +46-8 554 421 00
Fax +46-8 554 421 01
info@se.schunk.com
www.se.schunk.com

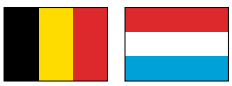
AUSTRIA
SCHUNK Intec GmbH
Holzbauernstr. 20
4050 Traun
Tel. +43-7229-65770-0
Fax +43-7229-65770-14
info@at.schunk.com
www.at.schunk.com

CZECH REPUBLIC
SCHUNK Intec s.r.o.
Ernsta Macha 1
643 00 Brno
Tel. +420-545 229 095
Fax +420-545 220 508
info@cz.schunk.com
www.cz.schunk.com

INDIA
SCHUNK India Branch Office
80 B, Yeswanthpur
Industrial Suburbs,
Bangalore 560 022
Tel. +91-80-41277361
Fax +91-80-41277363
info@in.schunk.com
www.in.schunk.com

PORTUGAL
Sales Representative
Victor Marques
Tel. +34-937-556 020
Fax +34-937-908 692
Mobil +351-963-786 445
info@pt.schunk.com
www.pt.schunk.com

SWITZERLAND,
LIECHTENSTEIN
SCHUNK Intec AG
Soodring 19
8134 Adliswil 2
Tel. +41-44-7102171
Fax +41-44-7102279
info@ch.schunk.com
www.ch.schunk.com



BELGIUM, LUXEMBOURG
SCHUNK Intec N.V./S.A.
Bedrijvencentrum Regio Aalst
Industrielaan 4, Zuid III
9320 Aalst-Erembodegem
Tel. +32-53-853504
Fax +32-53-836022
info@be.schunk.com
www.be.schunk.com

DENMARK
SCHUNK Intec A/S
Storhaven 7
7100 Vejle
Tel. +45-43601339
Fax +45-43601492
info@dk.schunk.com
www.dk.schunk.com

ITALY
SCHUNK Intec S.r.l.
Via Caio Plinio 5
22072 Cermenate (CO)
Tel. +39-031-770185
Fax +39-031-771388
info@it.schunk.com
www.it.schunk.com

SLOVAKIA
Sales Representative
František Jantoška
Mobil +421-911 854 077
info@sk.schunk.com
www.sk.schunk.com

USA
SCHUNK Intec Inc.
211 Kitty Hawk Drive
Morrisville, NC 27560
Tel. +1-919-572-2705
Fax +1-919-572-2818
info@us.schunk.com
www.us.schunk.com

CANADA
SCHUNK Intec Corp.
190 Britannia Road East,
Units 23-24
Mississauga, ON L4Z 1W6
Tel. +1-905-712-2200
Fax +1-905-712-2210
info@ca.schunk.com
www.ca.schunk.com

FRANCE
SCHUNK Intec SARL
Parc d'Activités des Trois Noyers
15, Avenue James de Rothschild
Ferrières-en-Brie
77614 Marne-la-Vallée Cedex 3
Tel. +33-1-64 66 38 24
Fax +33-1-64 66 38 23
info@fr.schunk.com
www.fr.schunk.com

MEXICO
SCHUNK Intec S.A. de C.V.
Av. Luis Vega y Monroy # 332
Fracc. Plazas de Sol
Santiago de Querétaro,
Qro. 76099
Tel. +52-442223-6525
Fax +52-442223-7665
info@mx.schunk.com
www.mx.schunk.com

SOUTH KOREA
SCHUNK Intec Korea Ltd.
907 Joongang
Induspia 2 Bldg.,
144-5 Sangdaewon-dong,
Jungwon-gu, Seongnam-si,
Kyunggi-do, 462-722
Tel. +82-31-7376141
Fax +82-31-7376142
info@kr.schunk.com
www.kr.schunk.com

Air-Oil-Systems Inc. www.airoil.com

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Distribution partners

ARGENTINA

Ruben Costantini S.A.
Ingeniero Luis Angel Huergo 1320
Parque Industrial
2400 San Francisco-Córdoba
Tel. +54-3564-421033
Fax +54-3564-428877
alejandro.costantini@costantini-sa.com
www.costantini-sa.com

AUSTRALIA

ROMHELD AUSTRALIA PTY. LTD.
Unit 30 / 115 Woodpark Road
Smithfield NSW 2164
Tel. +61-2-97211799
Fax +61-2-97211766
sales@romheldaustralia.com.au
www.romheldaustralia.com.au

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www.prodromus.com.br

Sanches Blanes S.A.
Estrada de Sapopemba, KM 41
CEP 09436-000 Ribeirao Pires, SP
Tel. +55-11-48242742
Fax +55-11-48279009
vendas@sanchesblanes.com.br
www.sanchesblanes.com.br

CROATIA

BIBUS Zagreb d.o.o.
Anina 91
10000 Zagreb
Tel. +385-13818006
Fax +385-13818005
bibus@bibus.hr
www.bibus.hr

CZECH REPUBLIC

BIBUS s.r.o.
Vídeňská 125
63927 Brno
Tel. +420-5 47 12 53 26
Fax +420-5 47 12 53 10
adam@bibus.cz
www.bibus.cz

ESTONIA

Ama-Prom OÜ
Kesk-Sojamae 3
11415 Tallinn
Tel. +372-6314411
Fax +372-6314412
vahur.err@ama-prom.ee
www.ama-prom.com

FINLAND

Nurminen Tools Oy
Vanha Vantontie 2
21100 Naantali
Tel. +358-2-4389668
Fax +358-2-4389669
sales@nurminentools.fi
www.nurminentools.fi

GREECE

Georg Gousoulis Co. O.E.
27, Riga Fereou Str.
14452 Metamorfosi-Athens
Tel. +30-210-2846771/2
Fax +30-210-2824568
mail@gousoulis.gr
www.gousoulis.gr

HUNGARY

IMI International KFT.
Norgren Division
Nagykörösi UT 99
1205 Budapest
Tel. +36-1-421-4031
Fax +36-1-284-8980
tamas.kesmarki@norgren.hu
www.norgren.hu

ICELAND

Formula 1 ehf
Breidamörk 25
P.O. Box 1 61
810 Hveragerdi
Tel. +354-5172200
Fax +354-5172201
formula1@formula1.is

INDONESIA

PT. Metaltech Indonesia
Jl, Gatot Subroto Km. 8
Tangerang 15136
Tel. +62-21-55657435
Fax +62-21-5912155
santek_trade@yahoo.com

IRAN

Iran Int. Procurement of Industries Co.
172 Khoramshar Avenue
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www.inmaacro.com

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SLOVAKIA

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International

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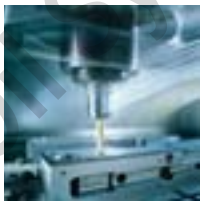

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